

Lamb Quiz Bowl Study Guide

PARTS OF THE LAMB

To be successful in raising and selecting sheep, you should know the names of the various parts of the animal and their locations on the animal's body. This will help you know what to look for and accurately describe what you have seen. (Figure 1)

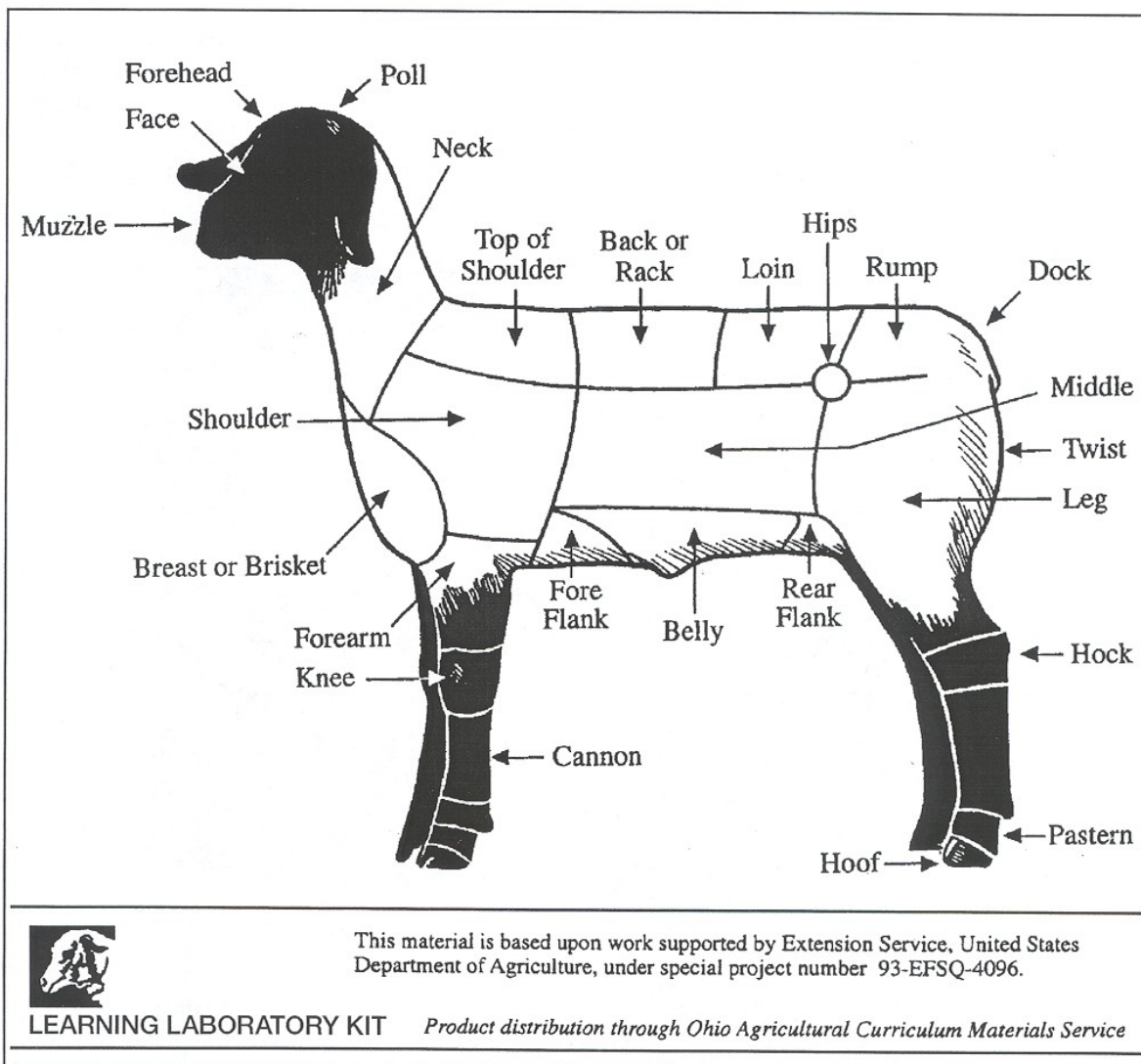


Figure 1
Parts of a Sheep

INHERITED DEFECTS

A defect is any characteristic that reduces the possibility of survival or decreases the productivity of the animal. The following defects are transmitted from parents to offspring by genetics. Animals and their relatives who exhibit these should be culled and not used for breeding.

Color—Spots or dark patches in the wool

Cryptochidism—One or both testes of the ram may be retained in the abdomen. This greatly reduces fertility.

Dwarfism—A very serious defect that results in abnormally short legs, decreased fertility and a short life span.

Entropion (inverted eyelids)—The lower eyelid rolls in and causes eye irritation.

Face covering—Too much wool on the face causes problems with the sheep's vision and reduces production.

Fleece defects—Imperfections such as high belly wool, hairiness and fuzzies should be avoided because they reduce fleece value.

Horns and scurs—These are a defect in polled breeds.

Jaw defects—Undershot and overshot jaws where the teeth do not meet the pad.

Rectal prolapse—A weakness that causes the sheep to push out of the rectal issue.

Skin folds—These wrinkles make the sheep very hard to shear.

Spider lamb syndrome—This is a recessive trait that results in lambs with deformed legs and spines. These lambs die early in life and rarely reproduce. This is a very serious defect that is currently appearing in some breeds of sheep. DNA testing is currently available to assist in the elimination of this syndrome.

SIZE CONSIDERATIONS

- ◆ Lambs generally purchased at 8-10 weeks of age (50-60 pounds)
- ◆ Most lamb projects started April or early May
- ◆ Market lambs should weigh 100 pounds or more (ideal 115-140)
- ◆ Average lamb on good ration gain 0.50 – 0.75 pounds per day

SELECTING JUDGING MARKET LAMBS

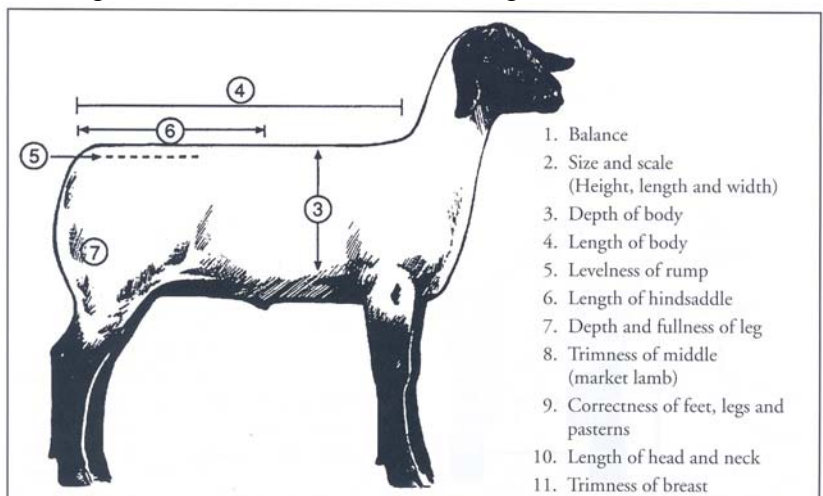
Conformation: combine weight and frame; straightness of lines, natural muscling and trimness

- ✓ Adequate Frame
- ✓ Long bodied
- ✓ Clean / trim front end / middle
- ✓ Strong level topline
- ✓ Long thru loin and rump
- ✓ Level rump
- ✓ Structurally correct set of legs

Breeding Sheep

Purebred sheep same as market with more

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Condition

No excessive fat, with some fat

Size

- Large enough to grow and produce
- Meet breed standard

Muscle

Extra muscling through top, hind saddle and leg. This is where high price cuts come from.

Structurally Sound

Front and Rear legs

- ◆ A type/ pattern that will give
- ◆ Carcass, fleece, character
- ◆ Long life with reproductive efficiency
- ◆ Efficient conversion of feedstuffs to meat and wool

Soundness

- Move freely
- Skeletal correctness

Breed and Sex Character

Rams = rugged and strong

Ewes = more refined in features

Determining Age

Number of permanent incisors on their lower jaw

Lambs –

8 temporary incisors

Yearling –

Center 2 teeth replaced by 2 permanent ones

2 years –

4 permanent teeth

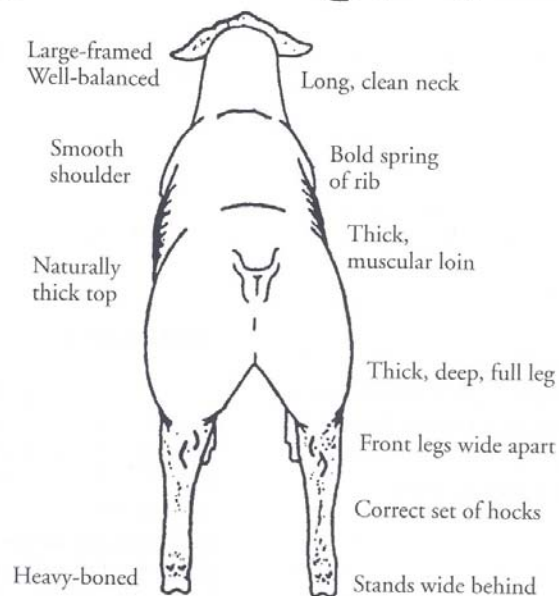
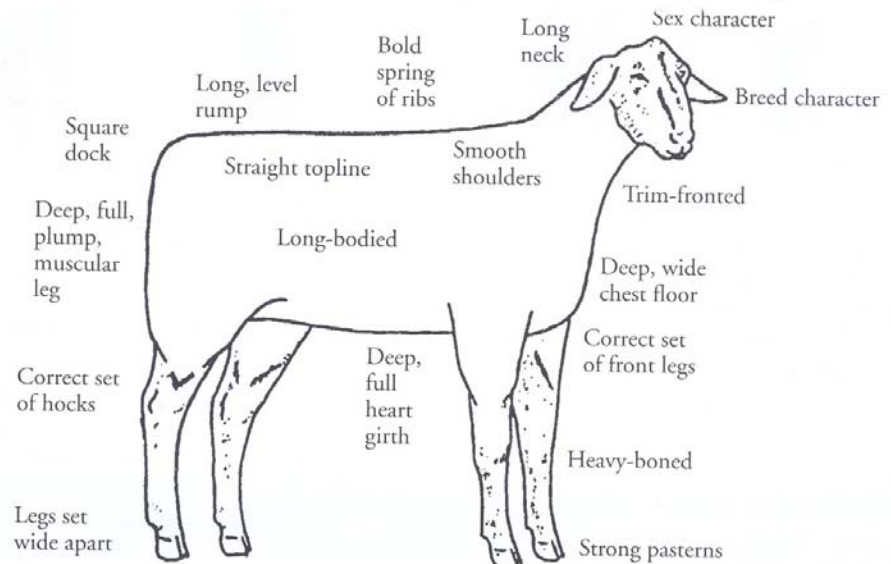
3 years –

6 permanent teeth

4 years –

8 permanent teeth – all there

Older sheep have narrower, worn teeth



Management Practices

- Adequate Space
 - Smaller pen when you get it
 - Can make larger as it grows – exercise
- Simple Shed / Shelter
 - Dry and provide shade
- Sheep Temperature – 102.3° F

GLOSSARY

Balance – A smooth and harmonious blending of body parts.

Breed – A group of sheep with similar characteristics (color markings, size, quality of fleece, etc.) that are passed on to their offspring.

Breed character (breed type) – Combination of features that identify an animal with a breed such as conformation, color and head shape.

Breeder – The owner of the parents of a lamb when they are mated.

Buck-kneed – with knees bent slightly forward.

Calf-kneed – with knees bent slightly backward.

Capacity (internal volume) – Internal body dimensions.

Carcass – The dressed body of a slaughtered meat animal

Castration – Removal of the testicles. Castrating should be done before the lamb is two weeks old.

Condition – The degree of fatness in breeding animals.

Concentrate – A feed that is high in nutrients and low in fibrous material. Examples are corn, oats and soybean meal.

Conventional – Early maturing.

Cow-hocked – Hocks closer together than feet, hocks bent in as viewed from the rear.

Crossbred – A sheep or lamb whose parents are of different breeds.

Dipping – Immersing the entire sheep in water containing an insecticide to kill ticks or lice.

Dock – Region where the tail was removed.

Docking – The removal of the tail. Docking should be done when the lamb is only a few days old.

Drenching – Treating sheep for internal parasites with an oral dose of a deworming medicine.

Early Maturing – Reaches high proportion of mature size quickly; opposite of late maturing.

Ewe – Female sheep of any age.

Extended – Longer and taller.

Femininity – Possession of well-developed secondary female sex characteristics.

Finish – Degree of fatness in meat animals.

Fleece – The wool from one sheep. The wool in the fleece is supposed to cling together in one piece. The fleece from most sheep in Ohio will weigh seven to eight pounds.

Flock – A group of sheep that are managed together. Sheep have inborn ability or desire to flock, or gather, together. This is also known as gregariousness.

Flushing – The practice of conditioning ewes before breeding by turning them to better pasture or feeding small amounts of grain. Flushing is done to increase the number of twin and triplet lambs that will be born.

Forage – A feed that is high in fibrous material and somewhat low in energy. Examples are hay, pasture and silage.

Gestation – The time from the date the ewe is mated with the ram until the lambs are born, usually 143 to 152 days.

Grade – A sheep that has only one purebred parent and one scrub parent.

Hindsaddle – The area of the lamb or carcass from the last rib back, includes loin, leg and rump.

Incisors – Front teeth.

Lamb – A young sheep, either male or female under 1 year of age.

Loin – The part between the last rib and the hip bones.

Low-set – Having short legs.

Marbling – The fat within the muscle.

Masculinity – Possession of well-developed secondary male sex characteristics in the head, neck and shoulders.

Meat type – Breeds of sheep that are used primarily for the production of meat. These are the predominant breeds in Ohio.

Mutton – The meat from sheep older than 12 months of age.

Open shoulders – Shoulder blades too far apart at the top.

Parturition – The process of giving birth.

Polled – Naturally hornless

Purebred – An individual sheep whose parents are of the same breed. This animal could be eligible for registration by a breed association.

Ram – A male sheep of any age. Sometimes a ram may be called a buck.

Rangy – A very long body, opposite of compact.

Rugged – Big, strong.

Rump The area between the hip bones and the tail head.

Scale - Size

Scrub – A sheep whose ancestry is so mixed it does not resemble any particular breed or cross

Scurs – Small horn buttons attached to the skin.

Shearing – Removing the wool from a sheep.

Shepherd – A person who cares for sheep.

Sickle-hocked – A hock that has too small of an angle made by the leg above and below the hock, as viewed from the side.

Soundness – a) If there are no weak spots in the wool; b) When an animal is free from disease and lacks structural defects that affect its usefulness.

Structural correctness – Free from any conformational abnormalities.

Stylish – Attractive, possessing a pleasing conformation or way of movement.

Substance – Amount of bone.

Tagging – Trimming or shearing the wool away from the tail or dock area.

Wasty – a) Too much fat on a carcass; b) An animal that has a paunchy middle.

Wether – A male sheep that has been castrated at an early age.

Yearling – A male or female sheep between 1 and 2 years of age.

SHEEP 1

1. What are three reasons to raise sheep?
 - Produce meat, wool, milk
 - Fairly inexpensive for beginners
 - Need little space
 - Clean and gentle
 - Easy to handle
2. Where did the Suffolk breed originate?
 - England
3. What's the most important quality of Finnsheep?
 - 250 – 400% lamb crop
4. What is the part of the lamb called that includes the rump and loin?
 - Hind saddle
5. Describe an overshot jaw
 - Short lower jaw that does not meet up with the upper pad
6. What is the average temperature of a sheep in °F?
 - 102.3° F
7. What are three reasons for lambs dying?
 - Navel Ill –
 - Pneumonia –
 - Scours
8. What does wool have that other fibers don't?
 - Wool is self extinguishing.
 - Molecular coilspring – much more flexible without breaking
 - absorbs up to 30% of its moisture without feeling damp.
9. What are two by-products of the sheep carcass?
 - Glue,
 - violin strings,
 - leather goods,
 - lubricants,
 - medicines,
 - photographic film,
 - crochet needles
10. How many permanent teeth does a three year-old sheep have?
 - 6 permanent incisors

11. What is a ram?

- Male sheep also known as a “Buck”

SHEEP 2

1. Describe an abnormal lambing position?

- Twins coming at the same time
- Hind end first – breech
- Upside down or crosswise
- Head back
- One leg back

2. What is one piece of information you should read before treating a lamb with medication?

- Withdrawal time
- Dosage
- How drug should be administered (IM, SQ)
- Storage of drug

3. How many pairs of sheep are there in a four sheep judging class?

- 3 pairs – top, middle, bottom

4. What are the names of two parts of a sheep’s digestive system?

- Mouth, esophagus, rumen, reticulum, omasum, abomasum, small intestine, cecum, large intestine, rectum

5. What is the main function of the large intestine?

- Absorb water and water soluble nutrients

6. What is the primary nutrient corn provides for a sheep ration?

- (energy??) carbohydrates – sugar

7. What can you do to help a lamb start to breath?

- Clear the airway with straw in nostril
- Artificial respiration by lifting front leg and putting down
- Mouth-to-Nose resuscitation
- Vet. Aspirator

8. Where is the preferred injection sight on the body of a sheep and why?

- IM – in neck muscle
- SQ – Foreflank / Rear flank skin
avoid where most meat comes from (hind quarters) to avoid from tainting the meat

9. What is a symptom of tetanus in lamb?

- Stiff joints, no appetite

10. What is a common sheep external parasite?

- Ticks,
- nose botfly,
- tape worm,
- coccidiosis,
- common stomach worm,
- blood sucking louse,
- liver fluke

11. What live in a sheep’s rumen that digests fibrous foods like grass and hay that the sheep by itself could not digest?

- Bacteria and protazoa

12. Through what part of the digestive tract are most nutrients absorbed into the body?

- Small intestine.

SHEEP 3

2. If a lamb eats three pounds of feed and gain one-half pound per day for 60 days how much feed will it eat?
 - 180 pounds
3. Regular 17-day intervals
4. What are three careers associated with animal agriculture?
 - Ag Journalist
 - Animal Health Product Salesperson
 - Consultant
 - Geneticists
 - Livestock Breeder
 - Meat Cutter
 - Nutritionist
5. What's the difference between animal welfare and animal rights?
 - Animal Welfare – belief everyone should be required to treat each animal as humanely as possible for the good of the animal
 - Animal Rights – Belief that animals have the same rights as humans do
6. What are the five steps of the experiential learning cycle?
 - Experience
 - Share
 - Process
 - Generalize
 - Apply
8. What does it mean that a ewe is “settled”?
 - Pregnant

SHEEP GROUP ACTIVITY GUIDE

1. What are three items found in a sheep show box?
 - Hand shears,
 - hoof trimmers,
 - cards,
 - brushes,
 - curry combs,
 - bucket,
 - liquid soap,
 - sheep blankets,
 - spray bottles,
 - towels,
 - halter,
 - electric clippers
3. If ewes are scheduled to start lambing January 15th, when should they be sheared?
 - Just before lambing – early January
4. When examining a sheep what are the three vital signs?
 - Respiration Rate, Heart Rate, Temperature
5. What's the difference between animal welfare and animal rights?
 - Retail Cuts – sold to customers – Wholesale Cuts
7. What lamb wholesale cut contains the blade chop?
 - Shoulder

SHEEP 1 – RAM, LAMBS & YOU

Page 8 & 9

EWE, RAM AND DUAL-PURPOSE BREEDS

White-faced breeds are often known as “*ewe breeds*” because they are used as ewes for crossbred flocks. These breeds usually produce more wool and more milk. Black-faced breeds are sometimes called “*ram breeds*” because they are used as sires in commercial flocks to produce market (meat) lambs. Dual purpose breeds can be used as either ewe or ram breeds.

1. Where did the sheep breed Columbia develop?
 - a. U.S.
2. What sheep breed has the special qualities of being a sire breed and having a fast growth rate?
 - a. Hampshire
3. What breed of sheep can breed out of season?
 - a. Dorset
4. This all-white sheep breed developed in Scotland and is know for easy lambing and good milking capabilities. What breed is it?
 - a. Cheviot
5. This breed of sheep has the finest fleece and originated in Spain, what breed is it?
 - a. Merino
6. Developed in Finland, this very maternal sheep breed usually has a 250 – 400% lamb crop, what breed is it?
 - a. Finnsheep
7. Name the sheep breed that has a mouse-brown face from England.
 - a. Southdown
8. What are white-face breeds known as?
 - a. Ewe breeds
9. Why are white-face breeds known as ewe breeds?
 - a. Usually used as ewes in crossbred flocks because they produce more wool and milk
10. What are black-face breeds called?
 - a. Ram breeds

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FEEDING YOUR MARKET LAMB & MARKET TIME

At market time a meat lamb should weigh between 115 and 135 lbs., with 0.15 and 0.25 inches of back and a loin eye 2.5 square inches in size or greater. With good care, a market lamb should gain between 0.6 and 1.0 lbs. per day for its last 60-90 days on feed (on a concentrate ration). Lambs raised on pasture may gain 0.4 to 0.8 lbs. per day. The ideal market lamb will also have good conformation and sound feet, legs and mouth.

1. Sheep growing diets have about what percent crude protein?
 - a. 15% - 17%

2. Sheep finishing diets have about what percent crude protein?
 - a. 12% - 14%
3. At market time a meat lamb should weigh how many pounds?
 - a. 115 pounds – 135 pounds
4. Which type of lamb takes longer to grow, a market lamb or a wool lamb?
 - a. Wool lamb
5. What is one sheep judging term?
 - a. Stronger Topped,
 - b. Neater and Leaner in the Fore and Rear Flanks,
 - c. Trimmer thru the throat,
 - d. chest region along the underline,
 - e. Longer thru the loin, etc.

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LAMB DISEASES

Navel Ill

Cause: Bacteria enter via the umbilical cord after birth

Symptoms: Abscesses in the liver and leg joint. Lameness in the affected joint that will be hot, swollen and painful.

Prevention: 1) Immediately after birth, dip the navel stump in 7% tincture of iodine to dry the navel cord and kill any bacteria present.

Pneumonia

Cause: A virus, combined with stress, causes the initial damage. Bacteria invade secondarily.

Symptoms: Animal becomes lethargic, has a high fever and may have labored breathing and a nasal discharge.

Prevention: Provide adequate ventilation, prevent drafts and reduce stress.

Scours

Cause: Bacteria (salmonella, escherichia) or virus. The lining of the intestines becomes irritated and fluid is lost in the feces instead of being absorbed from the intestines into the body.

Symptoms: Diarrhea (loose stool) leading to dehydration.

Treatment: Immediately separate from other animals and administer fluids. Clean and disinfect between births.

Prevention: Be sure lambs receive at least 4 ounces of colostrums immediately after birth.

1. What is one way to prevent Navel Ill in lambs?
 - a. Immediately after birth, dip navel in tincture of 7% iodine; Disinfect lambing pens between births
2. How do you prevent pneumonia in sheep?
 - a. Provide adequate ventilation, prevent drafts, and reduce stress
3. What is the main symptom of scours in sheep?
 - a. Diarrheal (loose stool) that leads to dehydration

LAMBING TIME

Getting Ready to Lamb

Ewes should either be sheared or crotched prior to lambing. If you shear, it should be done about three or four weeks before lambing. This will allow for cleaner lambing and no dirty tags for lambs to suck. Handle the ewes gently. In tagging (crotching or crutching), the ewe's wool is trimmed from the crotch and udder and a few inches forward of the udder on the stomach.

Lambing pens

Lambing pens or “jugs” 6' x 6' should be ready for the newborn lamb and its mother. A jug allows a better opportunity to observe their bonding behavior and fix any problems that may arise during the first week following birth.

The jugs should have clean bedding, a small feeder and a container of water that cannot be spilled or stepped in by the newborn lamb.

Barns should be clean, dry, and free of draft-but not too warm. A warm, damp barn is conducive to bacterial growth, which may lead to pneumonia and other disease problems.

After Lambing

Ewes are often thirsty after giving birth. It is a good idea to offer the ewe a bucket of warm water containing about half a cup of stock molasses. Offer good hay but no grain the first day as it could promote more milk than a tiny lamb could use. If the ewe has twins or more, grain feeding should start that first day.

1. How long before lambing should ewes be sheared or crotched?
 - a. 3 – 4 weeks
2. Why is shearing and crotching done in ewes?
 - a. To allow for cleaner lambing and no dirty tags for lambs to suck on
3. What is the first thing that should be done when a lamb is born?
 - a. Clean the nostrils and mouth of uterine membranes to allow newborn lamb to breathe.

CHARACTERISTICS OF WOOL

Wool fiber is a molecular coil spring. This allows each fiber to bounce back to its original shape when stretched up to 50% when wet or up to 30% when dry. The flexibility of the wool also makes it more durable. A wool fiber can be bent back on itself more than 20,000 times without breaking compared to 3,000 times for cotton and 2,000 times for silk.

Resistance to Flame

Because wool contains moisture in each fiber, it resists flame without chemical treatment. Instead of burning freely when touched by flame, wool chars and stops burning when it is removed from the source of fire. Wool is self-extinguishing.

Fiber Absorbency

Wool takes up moisture in vapor form. Wool can easily absorb up to 30% of its moisture without feeling damp or clammy. The capacity to absorb makes wool a “temperature regular” because it can protect the body in cold and warm climates by keeping a layer of dry air next to the skin. This is why wool clothing is worn throughout the desert region of the world where it's hot during the day and cool at night.

Takes Dye Beautifully

Wool absorbs many different dyes deeply, uniformly and directly without the use of combining chemicals.

1. Name 2 parts of a wool fiber?
 - a. Tip, shaft, root, epidermis, cortex, medulla

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SHEEP BY-PRODUCTS

Throughout history, animals have been used as a food source. History shows that early peoples also used many other animal products, such as skins for clothing and shelter; bones and horns for tools; and stomachs for containers.

Today, animal by-products are used to manufacture many household items. About one-third, or 33% of the live weight of a lamb becomes boneless lamb meat. The rest, or 67% of the live weight, is made into other things such as those listed.

Blood. Used in cancer research, hair conditioners, fertilizers, animal feeds, and buttons.

Bone. Can be used to make crochet needles, dice, chess pieces, buttons, electrical insulators, and is also used in feed and fertilizer.

Edible by-products. Some by-products are edible, and are a major food source in some parts of the world, including Europe and Japan. Edible by-products are also called “variety meats” and include organs such as livers, hearts and tongues.

Fats. Some fats are edible and are used in margarine and shortening. Other fat is considered inedible and is used in soaps, oils and greases.

Gelatin. Gelatin can be produced from bones and hides. It is used in making ice cream, and wine, beer and vinegar, as well as medicine capsules and photography.

Hide. The hides from sheep are called sheep pelts, and are the most valuable by-product from sheep. Some pelts are processed with the wool on and become coat and boot linings, rugs and seat covers. On other pelts, the wool is removed from the skin and is used in a wide variety of ways. The skin then becomes leather and is used for shoes, suede and clothing.

Intestines. These are used to make surgical sutures and natural casings for sausage.

1. About what percent of the live weight of a lamb becomes boneless lamb meat?
 - a. 33%
2. Name 3 sheep by-products?
 - a. Hair conditioner;
 - b. animal feeds;
 - c. buttons;
 - d. fats for soaps,
 - e. oil;
 - f. Gelatin for ice cream,
 - g. wine,
 - h. beer,
 - i. jello;
 - j. glue

SHEEP FITTING HINTS

Wool Breeds. Wool breeds are judged 60% for their wool and 40% for their conformation. Here are some fitting tips:

- Shear so the fleece has grown to about 4” in length prior to the show
- Clean, curry or comb (without taking out the curl)
- Cut or “tip” the ends of the wool to emphasize a straight back and rounded rump area
- Trim the hooves and clean the udder and the tail area
- Putting a blanket or hood on a wool sheep is NOT recommended as it will pack the fleece.

Meat Breeds. Meat breeds are judged primarily on conformation. The following suggestions will help you prepare a meat breed for a breed show.

- Obtain a #2 or #3 wool card, a circular curry comb, a stiff brush, clean rags, stock dip or detergent a water pail and fitting stand
- Check your local guideline for the best time to shear before the show to meet any wool length requirements.
- Wash using a mild detergent within two to three weeks before showing
- Trim the wool close to the body with a sharp sheep shears
- Comb the entire with a circular currycomb to break up the fleece.
- Trim the ends until you have a smooth surface
- Use the wool card to straighten the fibers and bring them together
- Trim ends with the shears being careful to clip with only the upper blade and keeping the lower blade still
- Repeat the carding and trimming until the sheep’s fleece is smooth and compact
- Fit to emphasize a straight back and rounded rump area
- Provide bedding and place a clean blanket on the sheep
- Trim the hooves

Market Lambs. Market lambs should be “slick shorn” within a few days of the show. This means they should have the least amount of fleece possible. At the show, they are judged on size, confirmation and how muscular they are. Any amount of wool will distract the judge. The sheep should be washed after shearing and hooves trimmed.

1. Wool breed are judged 60% for their wool, and what percent for their conformation?
 - a. 40%
2. Which type of sheep, wool or market breeds, have their hair coat ‘slick shorn’ when they are shown?
 - a. Market breeds

SHEEP TALK 1 – GLOSSARY see page 34 & 35 from **Rams, Lambs and You** in back of handout

1. What term is used to refer to the amount of weight a lamb gains each day?
 - a. Average Daily Gain (ADG)
2. What is the condition called where a sheep has lost some, but not all, of its teeth?
 - a. Broken Mouth
3. What is docking?
 - a. Cutting the tails short on baby lambs
4. What is dual purpose sheep breed used for?
 - a. Both wool and meat
5. What is a female sheep called?
 - a. Ewe
6. What is a young unborn animal as it develops in the uterus of a mammal called?
 - a. Fetus
7. What is a flock?
 - a. Small group of sheep
8. What is mutton?
 - a. The meat from mature sheep
9. What is the region of the foot or leg between the hoof and dewclaw called?
 - a. Pastern
10. What is an animal called that is born without horns in a species that sometimes has them?
 - a. Polled
11. What is another name for progeny?
 - a. Offspring
12. What are dung locks, floor sweepings or stained pieces of wool called?
 - a. Tags

SHEEP 2 – SHEAR DELIGHT

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YIELD GRADE AND CUTABILITY

The standards for determining yield grades are determined by the United States Department of Agriculture (USDA). The numbers 1, 2, 3, 4 and 5 identify the USDA yield grades for lamb. The yield grade is a simple way of estimating the cutability of the lamb carcass. Cutability is the yield of closely trimmed retail cuts from major wholesale cuts of the lamb carcass, expressed as a percentage of carcass weight. This means that if a lamb carcass has a 50% cutability, one-half or 50%, of the weight of that carcass will become retail cuts, such as lamb chops, that consumers will eat. A yield grade 1 carcass has better cutability than a yield grade 5 carcass.

Cutability. The major factor that affects cutability is fatness of the lamb carcass. A lamb carcass that is leaner will have a higher cutability than a carcass that is fatter. A fat carcass will produce more waste than a lean carcass. Fat thickness is the measurement that is used to determine the yield grade of a carcass.

Fat thickness. Fat thickness is measured at the twelfth rib, over the rib eye muscle. Lambs have 13 ribs, so on a live lamb, this area would be very close to the front of the loin. The rib eye is the major muscle that lies on both sides of the backbone, down the top and loin the lamb. Judges usually feel the loin area on a lamb to help them determine fat thickness and the size of the rib eye muscle.

1. Who or what determines the standards for determining yield grades?
 - a. United States Department of Agriculture (USDA)
2. What does cutability mean?
 - a. The yield of closely trimmed retail cuts from major wholesale cuts of a carcass
3. What is the best yield grade for cutability?
 - a. One
4. What is the major factor that affects cutability in a carcass?
 - a. Fatness
5. Where is fatness measured?
 - a. At the 12th rib over the rib eye muscle

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SHEEP'S DIGESTIVE SYSTEM

Before you did this exercise did you know that some animals have different organs for digesting their food? Sheep, cattle and goats have a large compartment in front of their stomach (abomasums) called a 'rumen'. Animals that have this kind of digestive system are called 'ruminants'. What makes the rumen special? It is home to millions of bacteria and protozoa that help to digest plant fibers. Without them, your sheep could digest grass no better than you. Not all animals that eat plants have a rumen, though. Horses have a digestive system similar to a pig's or a person's, except that horses have a much larger cecum. Like the rumen, the cecum is also home to microorganisms. In most animals, the cecum is too small to be much help in digestion.

Each part of an animal's digestive system serves a purpose. Here is a quick overview.

Teeth – Breaks the feed into small particles.

Salivary glands – Secrete fluid to moisten food and make it easier to swallow. In ruminants saliva functions to maintain consistency of the cud and to neutralize acids formed by many microorganisms.

Esophagus – Moves the food from the mouth to the stomach. In ruminants it allows the food to be moves from the rumen back to the mouth for further chewing (rumination).

Small Intestine – Very long complex tube composed of duodenum, jejunum and ileum. More nutrients are absorbed here than anywhere else.

Cecum – Sometimes called the 'blind gut' because it doesn't really go anywhere. This is another place in the digestive tract where microorganisms live. It is large enough in horses to allow them to digest fibrous food, but it is very small in most other animals (including pigs and people).

Large Intestine – Its main function is to absorb water and water-soluble nutrients (like B-vitamins).

Rectum – Organ through which the undigested portion of the food is eliminated.

1. What are animal with a four compartment stomach called?
 - a. Ruminants
2. Because of their rumen, sheep and cattle can digest what, that monogastrics, such as humans can not?
 - a. Forage, roughage

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SHEEP MANAGEMENT see back of handout for pgs 14 & 15

1. When should lambs be introduced to creep or grain?
 - a. When they begin nursing
2. When should tails be docked?
 - a. 2 – 3 days old
3. When should ram lambs be castrated?
 - a. 2 – 3 days old
4. When is the general breeding time for sheep?
 - a. September to November
5. When is the general lambing time for sheep?
 - a. February to April

LAMBING EWES

Signs of Lambing

- The udder will begin to fill
- The vulva will show a soft, shiny appearance and be enlarged
- A mucous discharge from the vulva during the last 24 hours before lambing
- The ewe will stop eating a few hours before delivery
- The ewe will lie down and get up often
- The ewe will walk around in a small area

Difficult Births – If the lamb is not born within about one hour after the water sac first appears help is needed. If you are not experienced try to find someone to assist you.

- Wash your hands and arms with soap and water
- Cover your hands and the ewe's vulva with a disinfectant liquid soap
- Apply soap flakes or mineral oil to the moistened hand and arm for longer lasting lubrication
- Be sure your fingernails are closely trimmed
- Check to see how the lamb is being presented

Other Helpful Tips

- If the tops of the feet are seen, the lamb is coming head first. If the bottom of the feet are showing the lamb is coming breach or backwards.
- Pull the lamb firmly and slowly until the lamb is completely delivered to avoid causing the ewe to prolapse (the uterus turns inside out).
- Check to see if the lamb is alive by inserting a finger in its mouth—if there is a sucking reflex, the lamb is alive.
- To temporarily stop ewe from pushing (birth contractions) ask an assistant to open the ewe's mouth and pull her tongue forward.

1. What are 2 signs of lambing?

- a. The udder will begin to fill, the ewe will go off by herself, the ewe is restless, the ewe will lie down and get up often, stretching

LIFE SAVING MEASURES

Lambing Losses – Be prepared to avoid losing lambs to these six causes:

- Not breathing
- Cold
- Starvation
- Pneumonia
- Scours (Diarrhea)
- Navel Ill

- Entropion (Inverted eyelids)
- Urinary Calculi (Water Belly)

Clearing the Airway – Some new lambs need encouragement to breathe. It is most important that the lamb takes that first gasp of air. One way to get it to breathe is to take a small straw or stem of hay and put it gently into its nose. Usually it will sneeze and take a breath of air. If this does not work, give the lamb artificial respiration by raising a front leg. This helps expand the chest cavity and draws air into the lungs. Push the leg down and repeat until the lamb starts to breathe. Mouth to nose resuscitation or a veterinary aspirator will also work.

1. What are 2 possible causes of lamb losses?
 - a. Not breathing, cold, starvation, pneumonia, scours, Navel Ill, entropion (inverted eyelids), urinary calculi (H₂O belly)

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FROM DEWORMING TO DOCKING

Castrating

A knife, emasculator, burdizzo or elastic band is used to remove the testicles from ram lambs within a few days of birth.

Deworming

Internal parasites are a major cause of death and poor growth. They can be controlled by injection, pills, dry medication mixed in the feed or a liquid drench. When drenching, the lamb's head is held in a normal position. The drench gun is inserted in the side of the mouth over the tongue.

Docking

An emasculator, burdizzo or elastic band may be used to remove the tail so fecal matter and mud don't accumulate and lead to a maggot infestation. The tail should be left at least two tailbones long.

Ear Tagging

Ear tags can be either plastic or metal. Care should be taken to avoid any large blood vessels when punching a hole in the ear. Ear tags are used to identify which lambs and which ewes belong together and for registration purposes.

Hoof Trimming

The hoof should be trimmed until the edge of the hoof is level with the sole of the foot. Hoof trimming is usually not necessary on young lambs going to market.

Giving Injections

Lambs are usually vaccinated for tetanus and enterotoxemia and may be given injections for parasites. The neck muscle is used for intramuscular injections, while subcutaneous (under the skin) injections may be given in the neck or flank areas. Careful attention to dosages and withdrawal time is very important.

1. Name one tool used for docking tails on lambs
 - a. Emasculator, burdizzo, elastic band
2. How long should the tail be left when docking?
 - a. At least 2 tailbones long

COMMON SHEEP DISEASES – CALL THE VET

White Muscle – White muscle disease is a problem in many areas. It is caused by a lack of selenium and/or Vitamin E in the diet of the ewe and/or lamb. The characteristics of white muscle disease are stiffness in the hind legs and a hunched or arched back. It affects the heart and skeletal muscles. If not treated it can cause death of a lamb in 1 to 3 days.

Prevention of white muscle disease can be accomplished by having adequate selenium in the ewe's diet, usually by feeding salt with selenium added. Also an injection of BoSe(contains selenium) given subcutaneously at birth is effective if your veterinarian recommends this for your area.

Enterotoxemia (Overeating Disease) – Increasing the energy level of feed too rapidly can cause enterotoxemia, or overeating disease. The disease is prevented by a series of vaccinations for *Clostridium perfringens*, types C

1. What is a symptom of rectal prolapse?
 - a. Rectum hangs out
2. What is the disease that causes a lamb to have stiff muscles and a hunched back?
 - a. White Muscle Disease
3. What is the cause of *White Muscle Disease*?
 - a. Lack of selenium and/or Vitamin E
4. What is another name for *entertoxemia*?
 - a. Overeating Disease
5. What disease is the biggest problem in the sheep industry that affects the central nervous system and has no known cure?
 - a. *Scrapie*
6. Name 3 keys to prevention of disease.
 - a. Keep facilities clean, have vaccination program, have adequate housing and space, provide fresh clean water, feed a balanced diet, control predatorsel rodents, control exposure to other species and new animals, internal and external parasite control

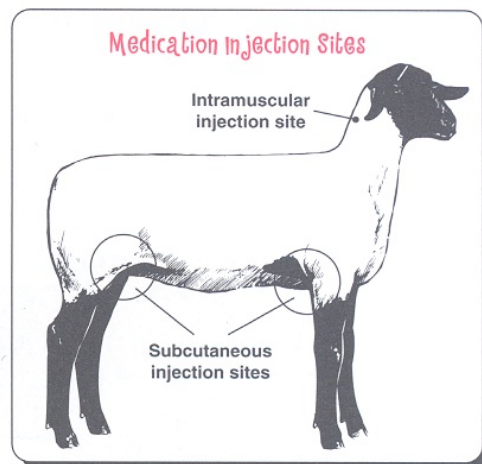
INTERNAL & EXTERNAL PARASITES

Parasites can live inside a sheep or outside under the wool. Common internal parasites are liver flukes, tape worms, Haemonchus (large stomach worm), Ostertagia (brown stomach worms) and Trichostrongylus (stomach hair worms). Common external parasites include ticks or keds and maggots.

1. Name a common internal parasite.
 - a. liver flukes,
 - b. tape worms,
 - c. large stomach worms,
 - d. brown stomach worms
 - e. stomach hair worms,
 - f. coccidiosis
2. Name a common external parasite
 - a. Ticks, maggots, lice, mosquitoes

QUALITY ASSURANCE PRINCIPLES & PRACTICES

1. What term is used to describe practices that are done to ensure that only animals that will produce safe and wholesome meat are being set to market?
 - a. Quality Assurance
2. What are 2 things that should be done with animal medications and drugs to ensure safe use?
 - a. Record animals treated, dates treated, products administered, how administered, withdrawal time, properly store and label all animal health products, follow all directions



SERVING LUSCIOUS LAMB

Lamb is the term used to describe meat from sheep that is harvested at less than one year of age. Mutton is the term for meat from sheep that are harvested at 2 years of age or older. Sheep processed between one and two years of age are known as “*yearling*”. Lamb has a much milder flavor than mutton. The United States produces approximately 250 million pounds of sheep meat each year, of which nearly 235 million pounds are lamb meat. Most lambs in the United States are harvested between 5 – 7 months of age.

Consumption – Almost all lamb meat produced in the United States is sold in supermarkets and restaurants. Lamb consumption is greater on the east and west coasts, due to higher ethnic populations than in the Midwest. People of Hispanic, Greek and Middle Eastern origin generally consume more lamb than consumers of other ethnic descents.

Lamb is a nutritious food. A three ounce serving of lean lamb, such as lamb leg, has only 160 calories.

Cooking Methods-Moist and Dry Heat – There are two basic methods of cookery for lamb: moist heat cookery and dry heat cookery. Moist heat cookery uses liquids. The liquids help tenderize less tender cuts of lamb, such as neck slices, shoulder cuts, riblets, breasts and shanks. Types of moist heat cookery include cooking in liquid and braising. In braising, only a small amount of liquid is used and resulting steam helps tenderize the meat

Dry heat cookery is used for most cuts of lamb, including most types of lamb chops, roasts, leg of lamb and ground lamb. Types of dry heat cookery include grilling, broiling, roasting and pan-frying.

1. How old are most lambs when they are harvested?
 - a. 5 – 7 months of age
2. Where in the U.S. is the highest amount of lamb consumed?
 - a. East and West Coasts

SHEEP TALK 2 – Glossary see pages 34 – 35 from Shear Delight literature in back of handout

1. What is the term used to describe when a ewe prematurely expels an undeveloped fetus?
 - a. Abortion
2. What is a birth called which the rear portion of a fetus is presented first?
 - a. Breech
3. What is a card?
 - a. A hand tool used to fit show sheep Machine used to separate wool fibers
4. What term describes the natural waviness of wool fiber?
 - a. Crimp
5. What is the oral administration of a liquid, usually medicine for internal parasites/
 - a. Drenching
6. What is dystocia?
 - a. Difficult birth
7. What is an injection given directly into an animal's bloodstream?
 - a. Intravenous (IV)
8. Where is an intramuscular (IM) injection given
 - a. Neck muscle
9. What is the period of time when female mammals are producing milk?
 - a. Lactation
10. What is a chemical substance that nourishes the body?
 - a. Nutrient
11. What is another term that refers to sheep?
 - a. Ovine
12. What is a written statement giving the record of an animal's ancestry?
 - a. Pedigree

SHEEP 3 – LEADING THE FLOCK

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GIVING ORAL REASONS

In order to give a good set of reason you need:

- Knowledge of ideal sheep
- Knowledge of names of parts and comparative terms
- Knowledge of reasons organization
- Ability to take good notes
- Confidence

A judging class is made up of four animals. Reasons are given by comparing three pairs of animals: top pair, middle pair, bottom pair and explaining why one animal is better than another.

There are many ways to say the same thing. The challenge of reasons is to say the same thing more than once in a set of reasons, but worded such that the reasons do not become repetitious. Imagine that you are describing the class to a person who has not seen it. Mainly be comparing one animal to another.

1. What do you need to give a good set of reasons?
 - a. Knowledge of ideal sheep, knowledge of names of parts and comparative terms, knowledge of reasons organization, ability to take good notes, confidence

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EXPLORING SHEEP REPRODUCTIVE SYSTEMS

Female Reproductive Parts

Broad ligament – A rough band of fibrous tissue that holds the uterus in place.

Cervix – Barrier that protects the uterus from infection and foreign debris.

Ovary – the eggs develop here.

Oviduct – Fertilization takes place here. Fertilized egg travels down the oviduct to the uterus to develop.

Uterus – The fetus-the baby lamb-develops here during pregnancy

Vagina – Tube that connects the vulva with the uterus, where the ram deposits the semen, serves as the birth canal.

Vulva – External opening to the reproductive tract.

Male Reproductive Parts

Epididymis – Tube that stores sperm, transports it from the testicles to the penis.

Penis – Part of the tract that the ram uses to breed the ewe.

Retractor penis muscle – Pulls the penis back into the ram's body after mating.

Scrotum – Covers and protects the testicles.

Sheath – Provides protection for the penis

Sigmoid flexure – Muscle that keeps the penis inside the ram's body and allows it to be extended during mating.

Testicles – Produce the male hormone testosterone. Where the sperm is made.

1. Where is the ovum released from?
 - a. The follicle on the ovary
2. Where does the ovum go from the ovary?
 - a. Oviduct
3. What are two factors that influence fertility in a ewe?
 - a. Heredity; age of ewe; light, temperature, humidity and season of the year; association with the ram, nutrition, disease and parasites

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INDUSTRY FACTS

- There are 914 different breeds of sheep in the world
 - Australia, China and New Zealand have the largest numbers of sheep and the highest production of lamb and mutton meat
 - Per-capita consumption is 55 lbs in New Zealand and only about 1 lb in the United States
 - There are approximately seven million sheep in the United State in comparison to 98 million cattle.
 - In 1998 the United State produced approximately 233.8 million pounds of lamb
 - The top six sheep producing states are Texas (1,350,000), California (810,000), Wyoming (660,000), California (420,000), Colorado (410,000), and Utah (400,000)
 - The most popular sheep breeds in the United States are Rambouillet, Columbia, Suffolk and Hampshire
 - Dogs, llamas and even donkeys are used to guard sheep flocks from predators.
1. About how many different breeds of sheep are there in the world?
 - a. 914
 2. What country has the most sheep in the world?
 - a. Australia
 3. About how many sheep are there in the U.S.?
 - a. 7 million
 4. Which 2 states are the highest sheep producing states in the U.S.?
 - a. Texas and California
 5. What are 2 of the most popular sheep breeds in the U.S.?
 - a. Rambouillet, Columbia, Suffolk and Hampshire
 6. Besides dogs, what other animals are used to guard sheep?
 - a. Llama, donkeys

SHEEP TALK 3 – Glossary see pgs 34 & 35 from Leading the Flock in back of handout

1. What is the wool from one sheep called?
 - a. Fleece
2. What is the practice of feeding and managing the ewes so that they are gaining weight when the breeding season begins?
 - a. Flushing
3. What is refined wool grease?
 - a. Lanoline
4. What is the term used to describe exhibiting more than one estrous per year?
 - a. Polyestrus
5. What is the term used to describe the characteristics of an animal that can be seen or measured?
 - a. Phenotype