# 2025-2026
# Citrus County Fair
# Sheep
# Skill-a-thon Study Guide

# Citrus County Sheep Skill-A-Thon

A "Skill-A-Thon" is an excellent method of involving FFA and 4-H members in challenging, learn-by-doing activities. This program of helping youth develop both their life skills and steer project skills is designed as a series of mini-learning stations. Use this guide to prepare for the skill-a-thon at the county fair.

OBJECTIVES:

1. To provide a learning laboratory which will enhance knowledge of the horse industry.
2. To help youth feel more comfortable communicating with an adult.
3. To gain self-confidence and skills in one-on-one communication.
4. To develop responsibility for completing a project.
5. To develop critical thinking and problem-solving skills.
6. To provide additional opportunities to recognize youth for their accomplishments.

To have FUN!

TOPICS:

The topics are specific for each of the Fair's age groups for skill-a-thons.
Age as of September 1st, 2025.

**J:** Junior (8-10 yrs.)
**I:** Intermediate (11-13 yrs.)
**S:** Senior (14-18 yrs.)

1. Animal By-Products **(J, I, S)**
2. Wholesale Cuts of Lamb **(J, I, S)**
3. Primal Cuts **(I, S)**
4. Meat Facts **(I, S)**
5. Wool Terms (**J, I, S**)
6. Preventative Healthcare **(J, I, S)**
7. Breed Matching **(J, I)**
8. Animal Grading **(S)**

*This Study Guide was updated 12/2021*

## Animal By-Products J, I, S

Animal by-products are anything of economic value other than the carcass that comes from animals during harvest and processing. They are classified as edible or inedible for humans.In developing countries by-products, may become jewelry, religious implements, tools, fuel, construction material, fly swatters, or musical instruments.***Rendering*** is the term for reducing or melting down animal tissues by heat and the rendering industry refers to itself as the "original recyclers".

### Edible by-products

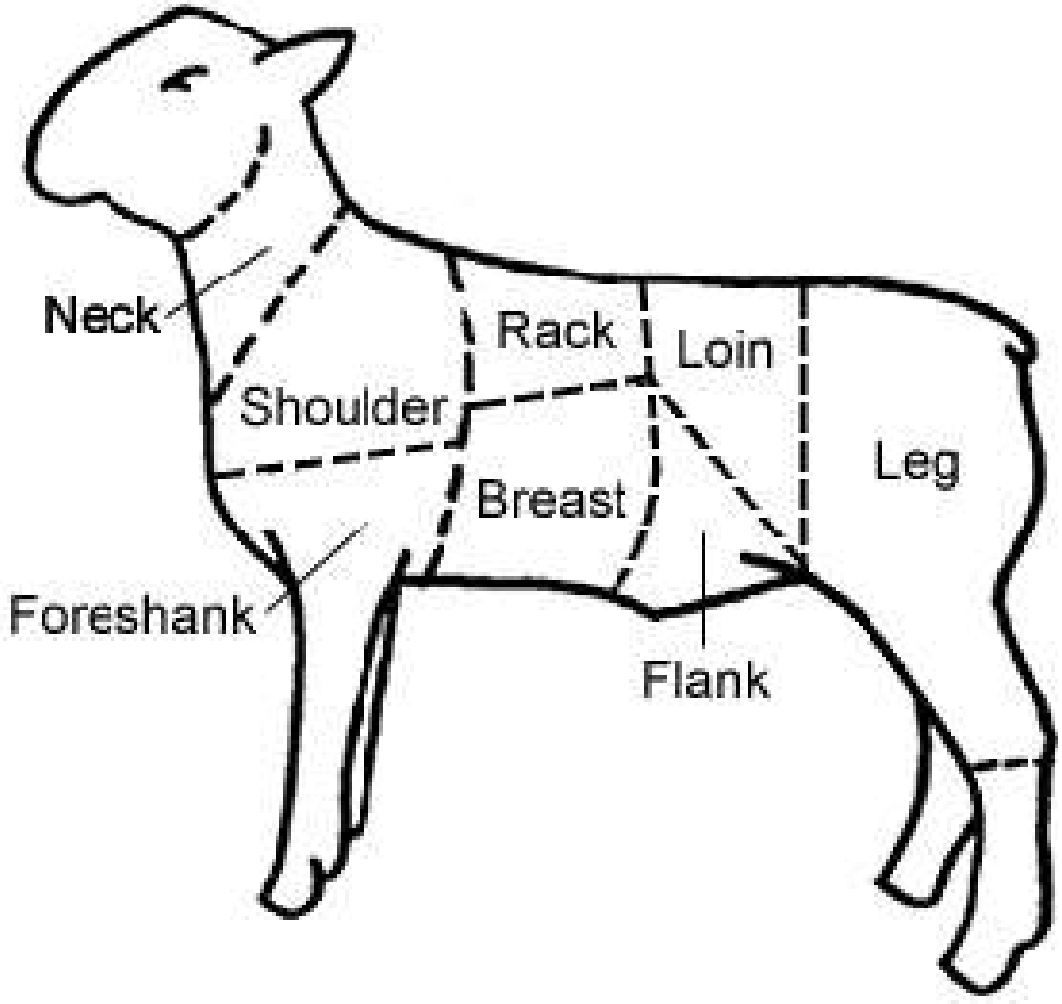
| Raw Material | Principal Use |
|---|---|
| Brains, Kidneys, Heart, Liver, Testicles | Variety Meats |
| Spleen, Sweetbreads, Tongue | |
| Cheek and head trimmings | Sausage ingredient |
| Blood | Sausage component |
| Fats Shortening | (candies, chewing gum) |
| Intestines | Sausage casings |
| Esophagus | Sausage ingredient |
| Bones | Gelatin for confectioneries (marshmallows), ice cream and jellied food products |

### Inedible by-products

| Raw Material | Processed by-product | Principal Use |
|---|---|---|
| Hides | Leather | various leather goods Glue paper boxes, sandpaper, plywood |
| Hair | Felts | plaster binder, upholstery, brushes, insulation |
| Pelts | Wool | Textiles |
| Skin | Leather goods | |
| Lanolin | | Ointments |
| Fats | Inedible tallow | Industrial oils, lubricants, soap, glycerin Insecticides, weed killers, rubber, cosmetics, antifreeze, nitroglycerine, plastics, cellophane, floor wax, waterproofing agents, cement, crayons, chalk, matches, putty, linoleum |
| Tankage | | Livestock and poultry feeds |
| Bones | Dry bone | Glue, hardening steel, refining sugar, Buttons, bone china |
| Bone meal | | Animal feed, fertilizer, porcelain enamel, water filters |
| Feet | Neatsfoot stock | Fine lubricants Neatsfoot oil Leather |
| Glands | | Pharmaceuticals Medicines |
| Lungs | | Pet foods |
| Blood | Blood meal | Livestock and fish feeds |
| Blood albumen | | Leather preparations, textile sizing |

## Wholesale Cuts of Lamb J, I, S

Fabrication of carcasses is the cutting of the carcass into wholesale and retail cuts for distribution to various markets. The size of the carcass and the preferences of the customer will determine how it is fabricated. For lamb carcasses, wholesale cuts come from standard cutting methods developed to: *a) Separate fat from lean portions b) Separate tough from tender sections c) Separate thick from thin sections d) Separate valuable from less valuable cuts e) Separate retail cuts by cutting across the grain.*



## Primal Cuts J, I, S

Of the wholesale cuts, those that are lean, tender, thick, and valuable and that contain a large proportion of their muscles running in the same direction are called *primal* cuts. The ***primal lamb cuts are shoulder, rack, loin and leg***.

## Retail Cuts of Lamb

At the retail markets, boxed cuts are used to generate retail cuts for the meat case. Different stores have their own styles for each cut in an attempt to meet their customers' needs. Retail specifications include size or thickness of cut, external fat trim, boneless or bone-in, and number of cuts per package. Items generated other than steaks and roasts may include stir fry,& kabob.


American Leg


Arm Chop


Blade Chop


Center Loin Chop


Center Rib Chop


Frenched Leg


Neck Slice

**I, S**

## Meat Facts

| 100g Roasted | Calories (g) | Fat (g) | Sat'd Fatty Acids (g) | Protein (g) | Iron (mg) |
|---|---|---|---|---|---|
| Beef | 216 | 9.9 | 3.79 | 29.58 | 2.9 |
| Chicken | 190 | 7.41 | 2.04 | 28.93 | 1.21 |
| Goat | 108 | 2.58 | .79 | 29 | 3.3 |
| Lamb | 206 | 9.52 | 3.4 | 28.22 | 2.05 |
| Pork | 212 | 9.66 | 3.41 | 29.27 | 1.1 |
| Rabbit (stewed) | 206 | 8.41 | 2.51 | 30.38 | 2.37 |

**J, I, S**

## Wool Terms

**Bellies** - short and less desirable wool from the belly of the sheep.
**Britch or Breech Wool** - wool from the hindquarters of the sheep, usually the coarsest on the body, often approaching hair in characteristics.
**Crimp** - the natural curl in the wool fiber, gives wool its natural resilience and elasticity.
**Fleece** - the wool from a single sheep in the shorn grease state.
**Grease Wool** - wool as shorn from sheep, not washed or scoured (raw wool).
**Handle or Hand** - a term referring to the actual feel of wool.
**Hoggett Wool** - also called virgin wool, first fleece shorn from a sheep when about one-year-old.
**Keratin** - a complicated chemical protein substance, major constituent of a wool fiber.
**Lamb's Wool** - wool taken from a lamb not over seven months old.
**Luster** - determined by the amount of light reflected by the fiber.
**Pelt** - the skin of the sheep with wool still on the skin.
**Scouring** - actual washing of dirt, grease and foreign matter from grease wool.
**Skirting** - a practice of removing from the edges of the whole fleece, at shearing time, all stained and inferior parts.
**Staple** - the length of a lock of shorn wool. In the trade "staple" refers to wool that averages 2.5 inches or more in length.
**Suint**- salts of perspiration present in the raw wool fleece.
**Woolen Yarn** - yarn spun from wool fibers which are short.
**Worsted Yarn** - yarn spun from wool fibers which are long.
**Yield** - amount of clean wool derived from grease wool in the scouring process.
**Yolk** - natural grease and suint in sheep's wool, when purified is known as lanolin

**PREVENTATIVE HEALTHCARE**
**HEALTHY ENVIRONMENTS**

**J, I, S**

Animal caretakers are responsible for providing safe, secure, and healthy environments. This section will focus on providing healthy environments. In Florida, hot temperatures are commonplace. So, maintaining a healthy environment requires a knowledge of heat and heat management. If not managed, too much heat results in heat stress. This can lead to reduced feed intake and weight loss, poor breeding efficiency, changes in behavior, and in extreme cases death can occur.

## HEAT AND HEAT STRESS

High temperatures are uncomfortable and can be stressful for livestock. Heat stress increases when combined with humidity, wind speed, and solar radiation (sunlight). Fortunately, sheep and goats are less susceptible to heat stress than cattle, swine, and alpacas.

## HEAT INDEX

To predict the likelihood of heat stress, ranchers, livestock producers and exhibitors can use a heat index. A Heat Index combines temperature, humidity, wind speed, and solar radiation to determine the stress on an animal for the specific environmental. The National Weather Service (NWS) maintains the Heat Index used by weather stations across the nation to forecast heat conditions (Table 1).

Table 1. The Heat Index is a measure of temperature and relative humidity. This table can be accessed on-line at https://www.weather.gov/safety/heat-index

**NWS Heat Index**

**Temperature (°F)**

| Relative Humidity (%) | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 80 | 81 | 83 | 85 | 88 | 91 | 94 | 97 | 101 | 105 | 109 | 114 | 119 | 124 | 130 | 136 |
| 45 | 80 | 82 | 84 | 87 | 89 | 93 | 96 | 100 | 104 | 109 | 114 | 119 | 124 | 130 | 137 | |
| 50 | 81 | 83 | 85 | 88 | 91 | 95 | 99 | 103 | 108 | 113 | 118 | 124 | 131 | 137 | | |
| 55 | 81 | 84 | 86 | 89 | 93 | 97 | 101 | 106 | 112 | 117 | 124 | 130 | 137 | | | |
| 60 | 82 | 84 | 88 | 91 | 95 | 100 | 105 | 110 | 116 | 123 | 129 | 137 | | | | |
| 65 | 82 | 85 | 89 | 93 | 98 | 103 | 108 | 114 | 121 | 128 | 136 | | | | | |
| 70 | 83 | 86 | 90 | 95 | 100 | 105 | 112 | 119 | 126 | 134 | | | | | | |
| 75 | 84 | 88 | 92 | 97 | 103 | 109 | 116 | 124 | 132 | | | | | | | |
| 80 | 84 | 89 | 94 | 100 | 106 | 113 | 121 | 129 | | | | | | | | |
| 85 | 85 | 90 | 96 | 102 | 110 | 117 | 126 | 135 | | | | | | | | |
| 90 | 86 | 91 | 98 | 105 | 113 | 122 | 131 | | | | | | | | | |
| 95 | 86 | 93 | 100 | 108 | 117 | 127 | | | | | | | | | | |
| 100 | 87 | 95 | 103 | 112 | 121 | 132 | | | | | | | | | | |

**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

Caution | Extreme Caution | Danger | Extreme Danger

The Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH) have created a heat tool (OSHA-NIOSH Heat Safety Tool) available on the App Store or Google Play. It can be used to monitor local heat conditions and predict the likelihood of heat disorders.

Download on the App Store | GET IT ON Google play

**SIGNS OF HEAT STRESS IN LIVESTOCK**

Livestock exhibitors know that it is in their best interest to keep sheep and poultry healthy and in good condition. Preventative healthcare seeks to identify potential issues before they become problems. Here are some of the symptoms indicating heat stress in livestock and poultry:

- Bunching in the shade
- Slobbering or excessive salvation
- Foam around the mouth
- Panting or open mouth breathing
- Lack of coordination
- Trembling

| Temperature Range | |
|---|---|
| | °F |
| Poultry | 105.0 - 107.0 |
| Rabbit | 101.0-103.0 |
| Beef | 100.5 - 103.0 |
| Swine | 101.5-102.5 |
| Goat | 101.5 -103.5 |
| Sheep | 101.5 -103.5 |

Goats, along with humans, cattle, swine, poultry, rabbits, and sheep, are HOMEOTHERMS meaning they can control body temperature within a range of temperatures. Goats are exposed to many heat sources. Goats do not sweat; however, they do have other ways of controlling temperature.

Sheep heat transfer occurs by 3 primary modes. Conduction – transfer of heat to the ground, Convection – heat dissipation with air movement, Evaporation – loss of moisture from respiratory tract. Evaporation is the method for the greatest loss of heat. As the sheep pants, heat is lost from the body to the atmosphere. Panting also leads to water loss, so keep water available. Contrary to what you might think, the wool on a sheep serves to insulate them from hot temperatures.

Assume it is mid-August, the air temperature is 95°F, there is no wind, humidity is 95%:

1. Should you be making plans to reduce heat stress?
2. If so, what can you do to reduce heat stress?

Breed Matching **J, I**

1. St. Croix - St. Croix sheep are the foundation of many hair sheep breeds. They were developed in the Virgin Islands as a breed that would survive better in warm, tropical climates. Despite the background, St. Croix do very well in cool climates if they have shelter. Overall they are a very hardy breed and have an unusual resistance to parasite.

2. Katahdin - Katahdin are easily one of the most common hair sheep here in America. They were one of the first breeds to be recognized for their commercial production capabilities. These sheep are large, weighing anywhere from 120 pounds for ewes upwards of 250 pounds for rams. Despite their size they are generally docile and easy to handle for someone new to livestock. These are very productive sheep and it's not at all uncommon for ewes from good lines to produce triplets or quadruplets.

3. Barbados Blackbelly - The Barbados Blackbelly is a stunning sheep breed that is naturally polled. Developed for similar reasons as the St. Croix, people in Barbados wanted a sheep that could survive well in the warm and wet climate. The Barbados is one of the wildly available hair sheep breeds and for good reason. Aside from being very beautiful, these sheep are downright tough. They can survive on poor grass while still producing numerous healthy offspring. Barbados Blackbelly sheep are medium in size, with ewes averaging less than 100 pounds and rams upwards of 150 pounds.

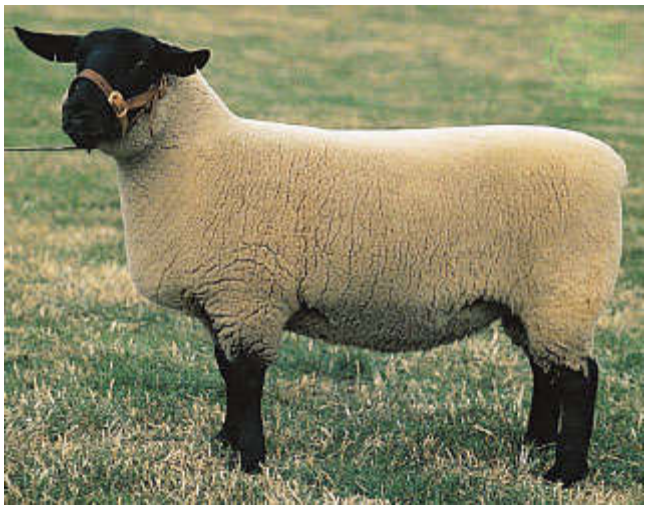
4. Dorper - Last but not least is the Dorper. Dorper are another commercial-type hair sheep and differ from other breeds in that they do have a wooly hair though they don't require any shearing. This breed is well known for being excellent moms and producing lambs that grow quickly. They are attractive to look at and also do well in pretty much any weather. Like many hair sheep, they are disease resistant and though they have more of a wooly hair, they don't suffer from health issues related to true wooly sheep breeds. Like the Katahdin, the Dorper is a large sheep – ewes average more than 150 pounds and rams can reach more than 250 pound.

5. Dorset - Both horned and polled Dorset are an all white sheep of medium size having good body length and muscle conformation to produce a desirable carcass. The fleece is very white, strong, close and free from dark fiber.


6. Hampshire - The **Hampshire sheep breed** is primarily raised for meat production, though the breed has also emerged as a popular choice for youngsters in 4-H and FFA rings due to its dramatic, flashy appearance in the show ring. Hampshire lambs are fast-growing and at maturity the Hampshire sheep breed is heavy boned with a lean carcass.

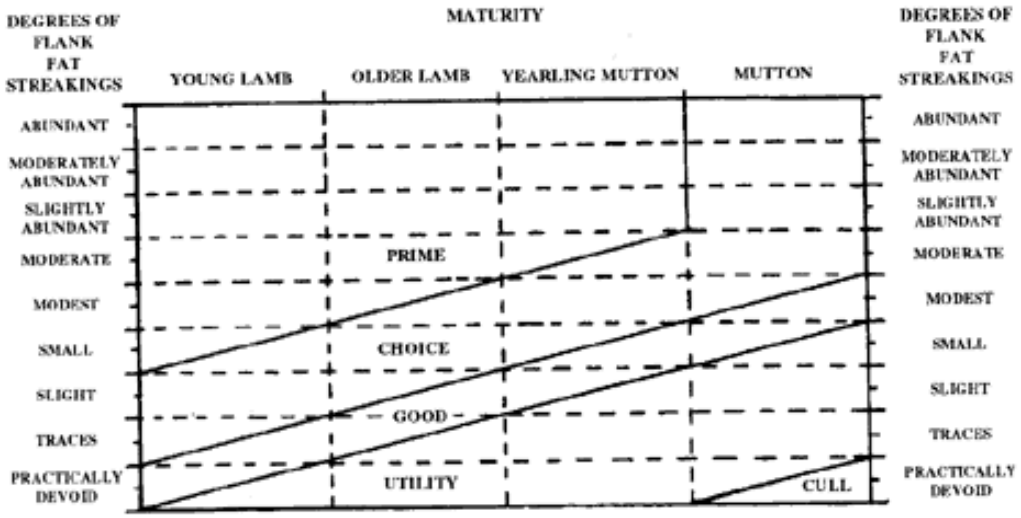
7. Southdown - The Southdown is best suited for farm flock production. It is a medium to small sized breed with a gray to mouse-brown face and lower legs and is polled (hornless). Southdown are an early maturing breed with good lambing ability and average milk production. They excel in a cross breeding program in their ability to produce meaty lamb carcasses at light weights and hot-house lambs. The Southdown is adaptable to varied and wet climates.

8. Suffolk - Suffolk sheep can be found around the world and are a popular choice in countries which value commercial sheep production. The Suffolk sheep breed is perhaps the most commonly used purebred sheep breed in the United States and are a frequent choice for commercial shepherds as terminal sires in crossbreeding programs.



# Animal Grading S

USDA Yield Grades are represented by the numbers 1 through 5. Yield grade 1 is the highest yielding, while yield grade 5 is the poorest yielding. Yield grading is calculated using the adjusted fat thickness over the ribeye muscle between the 12th and 13th ribs as follows: Yield Grade = .4 + (10 X Adjusted fat thickness, 12th rib, inches.

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USDA Yield Grades for lamb and fat thickness ranges Yield Grade Fat Thickness

Yield Grade 1 .00 to .15 inch

Yield Grade 2 .16 to .25 inch

Yield Grade 3 .26 to .35 inch

Yield Grade 4 .36 to .45 inch

Yield Grade 5 .46 inch or greater

Lambs are typically harvested at 115 to 135 pounds and yield carcasses weighing between 45 and 85 pounds (dressing percentage = 40%). Heavier carcasses that are lean with adequate fat cover receive the highest prices. There are value-based marketing systems currently in place that use a more detailed estimation equation for determining cutability. The factors used are carcass weight, Adjusted fat thickness, body wall thickness and rib eye area. Live and carcass quality and yield grades are outlined with photos of sample carcasses at the following several meats judging web sites.
http://www.meatscience.org/page.aspx?id=462