

INDIANA 4-H & INDIANA FFA

Career Development Events





Livestock Skillathon

Purpose

The purpose of the Livestock Skillathon CDE is to provide a competitive, yet friendly, environment for youth to develop their knowledge of animal science and livestock management practices, and to gain and improve their production and life skills through hands-on learning.

Objectives

Students will be able to:

- 1. Demonstrate the understanding and practical application and the principles of Animal Sciences related to the beef, sheep, swine, and meat goats project areas.
- 2. Identify common breeds of livestock, feedstuffs, retail meat cuts, and equipment
- Demonstrate knowledge and skills related to the proper care and handling related to animal health care.
- 4. Demonstrate knowledge related to all aspects of the livestock industry.
- 5. Demonstrate knowledge and skills of livestock and meat evaluation.

Event Format

- Area Contest Components (All Individual Activities)
 - o Identification of breeds, equipment, feedstuffs, retail meat cuts
 - o Industry Quiz
 - o Quality Assurance Exam

Area Contest Scoring/Advancement

- o Identification- Total Possible Points:
 - Breed: 5 points per question
 - JR: Breed Only
 - SR: Breed 3 pts & Description 2 pts
 - Equipment: 5 points per question
 - Feedstuffs: 5 points per question
 - JR: Feed ID
 - SR: Feed ID 3 pts & Classification 2 pts
 - Retail Meat
 - Junior: 4 Points (Species: 1pt; Primal 1pt; Retail 2pts)
 - Senior: 5 Points (Species: 1pt; Primal 1pt; Retail 2 pts; Cookery 1pt)
- o Industry Quiz: 2 points per question 25 questions
- Quality Assurance Quiz: 2 points per question
 - Juniors-10 questions; Senior- 20 questions
- o Total points for Junior Individuals: 260; Seniors Individuals: 290
- o Total points possible for Junior team: 780; Senior team= 870
- o Team Score is composed of top three scores per team
- Advancement to State
 - Top 5 Senior Teams
 - Top 2 Junior Teams
 - If an area contest included both 4-H and FFA teams, but both divisions were not represented by the teams qualifying for the state contest, the area chairperson may add an additional state qualifying team to represent the missing division.

State Contest Components

- Individual Components
 - Identification of breeds, equipment, feedstuffs, retail meat cuts
 - Industry Quiz
 - Quality Assurance Exam
 - Hay Judging
 - Wool Judging
 - Retail Meat Judging

Team Components

- Quality Assurance
- Animal Evaluation
- Marketing and Performance

State Contest Scoring

INDIVIDUAL ACTIVITIES

- o Identification-Total Possible Points:
 - Breed: 5 points per question
 - JR: Breed Only
 - SR: Breed 3 pts & Description 2 pts
 - Equipment: 5 points per question
 - Feedstuffs: 5 points per question
 - JR: Feed ID
 - SR: Feed ID 3 pts & Classification 2 pts
 - Retail Meat
 - Junior: 4 Points (Species: 1pt; Primal 1pt; Retail 2pts)
 - Senior: 5 Points (Species: 1pt; Primal 1pt; Retail 2 pts; Cookery 1pt)
- o Industry Quiz: 2 points per question 25 questions
- Quality Assurance Quiz: 2 points per question
 - Juniors-10 questions; Senior- 20 questions
- Hay Judging- Class of 4 samples with data and scenario (50 points)
- Wool Judging- Class of 4 fleece samples with scenario (50 points)
- Retail Meat Judging
 - 2 Species represented
 - Classes of 4 cuts (Ex. Ribeye steaks, Lamb Loin Chops, Pork Loin Chops)
 - Each class 50 points
 - Questions- 5 questions per class; 2 points per questions

TEAM ACTIVITIES

- Quality Assurance Exam
 - Seniors- 25 questions; 2 points per question (50 points)
 - Juniors- 15 questions; 2 points per question (30 points)
- Animal Breeding Class
 - Keep/Cull Class with Data and Scenario (50 points)
 - Questions- 2 points per question (10 points)
- Marketing and Performance
 - Placing class with performance data (NOT EPDs) with a scenario (50 points)
- Marketing and Performance youth are allowed to use a calculator. Bring your own calculator. NO programmable calculators or cell phones allowed!
- Total Points Possible
 - o Individual: Senior: 510 Points; Junior: 480 Points
 - o **Team**: Senior: 160 Points; Junior: 140 Points
- Tiebreakers
 - Scores in order of 1-Industry Quiz; 2-Quality Assurance Quiz; 3-Retail Meat ID





Scantron Example-Front Side

Meat Skillathon Form #480-5b

Incorrect Marks Correct Mark





| State | | Last Name | | First Name |
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| 4 1342 | 0 | 0 | 0 | 0 | 0 | 0 | 1342 |
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| 9 2314 | 0 | 0 | 0 | 0 | 0 | 0 | 2314 |
| 10 2341 | 0 | 0 | 0 | 0 | | 0 | 2341 |
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| 14 3142 | 0 | 0 | 0 | 0 | 0 | 0 | 3142 |
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| 16 3241 | 0 | 0 | 0 | 0 | 0 | 0 | 3241 |
| 17 3412 | 0 | 0 | 0 | 0 | | 0 | 3412 |
| 18 3421 | 0 0 | 0. | 0 | 0 | 0 | 0 | 3421 |
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| 20 4132 | 0 | 0 | 0 | 0 | 0 | 0 | 4132 |
| 21 4213 | | 0 | 0 | 0 | 0 | 0 | 4213 |
| 22 4231 | 0 | 0 | 0 | 0 | 0 | 0 | 4231 |
| 23 4312 | 0 | 0 | 0 | 0 | 0 | 0 | 4312 |
| 24 4321 | 0 | 0 | 0 | 0 | 0 | 0 | 4321 |
| | 4 | 2 | 3 | 4 | 5 | 6 | |





| Individ | ual Quality Assuran | ce Quiz |
|--------------|---------------------|--------------|
| 1 A B C D E | 11 A B C D E | 21 A B C D E |
| 2 A B C D E | 12 A B C D E | 22 A B C D E |
| 3 A B C D E | 13 A B C D E | 23 A B C D E |
| 4 A B C D E | 14ABCDE | 24 A B C D E |
| 5 A B C D E | 15ABCDE | 25 A B C D E |
| 6 A B C D E | 16 A B C D E | 26 A B C D E |
| 7 A B C D E | 17 A B C D E | 27 A B C D E |
| 8 A B C D E | 18 A B C D E | 28 A B C D E |
| 9 A B C D E | 19 A B C D E | 29 A B C D E |
| 10 A B C D E | 20 A B C D E | 30 A B C D E |

| | Questions |
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| 2 | A | (B) | C | (D) | E |
| 3 | (A) | (B) | C | D | E |
| 4 | (A) | (B) | C | (D) | E |
| 5 | A | B | C | (D) | E |
| 6 | (A) | B) | C | (D) | E |
| 7 | (A) | (B) | (C) | (D) | E |
| 8 | (A) | B | C | (D) | E |
| 9 | (A) | B | C | (D) | E |
| 10 | (A) | B | 0 | (D) | E |

| Industry Quiz | | | | |
|---------------|--------------|--------------|--|--|
| 1 A B C D E | 11ABCDE | 21 A B C D E | | |
| 2 A B C D E | 12 A B C D E | 22 A B C D E | | |
| 3 A B C D E | 13 A B C D E | 23 A B C D E | | |
| 4 A B C D E | 14ABCDE | 24 A B C D E | | |
| 5 A B C D E | 15ABCDE | 25 A B C D E | | |
| 6 A B C D E | 16ABCDE | 26 A B C D | | |
| 7 ABCDE | 17ABCDE | 27 A B C D E | | |
| 8 A B C D E | 18 A B C D E | 28 A B C D E | | |
| 9 A B C D E | 19ABCDE | 29 A B C D E | | |
| 10 A B C D E | 20 A B C D E | 30 A B C D E | | |

SCANTRON. Mark Reflex® EM-299184-1:654321 ED99



Scantron Example-Back Side

| ME E | Meat Identification | | | | | |
|------|---------------------|--------|--------|-------------------------|--|--|
| ID# | Species | Primal | Retail | Cookery | | |
| 4 | BPL | ABCDE | ABCDE | (D) (M) (D/M) | | |
| | | FGHIJ | FGHIJ | | | |
| 2 | BPL | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 2 | | FGHIJ | FGHIJ | | | |
| 2 | BPL | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 3 | | FGHIJ | FGHIJ | | | |
| A | B P L | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 4 | | FGHIJ | FGHIJ | | | |
| E | BPL | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 5 | | FGHIJ | FGHIJ | | | |
| C | B P L | ABCDE | ABCDE | D (M) D/M | | |
| 6 | | FGHIJ | FGHIJ | | | |
| 7 | BPL | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 1 | | FGHIJ | FGHIJ | A STATE OF THE STATE OF | | |
| 0 | B P L | ABCDE | ABCDE | (D) (M) (D/M) | | |
| 8 | | FGHIJ | FGHIJ | | | |
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| 9 | | FGHIJ | FGHIJ | 100000 | | |
| 10 | B P L | ABCDE | ABCDE | (D) (M) (D/M) | | |
| IU | | FGHIJ | FGHIJ | | | |

| Breed Identification | | | | |
|----------------------|--------------|--|--|--|
| Breed | Description | | | |
| 1 A B C D E | 1 A B C D E | | | |
| 2 A B C D E | 2 ABCDE | | | |
| 3 A B C D E | 3 A B C D E | | | |
| 4 A B C D E | 4 A B C D E | | | |
| 5 A B C D E | 5 ABCDE | | | |
| 6 A B C D E | 6 A B C D E | | | |
| 7 A B C D E | 7 ABCDE | | | |
| 8 A B C D E | 8 A B C D E | | | |
| 9 A B C D E | 9 A B C D E | | | |
| 10 A B C D E | 10 A B C D E | | | |

| | Equipment Identification | | | | |
|-----------|--------------------------|-----|------------|--|--|
| Equipment | | Use | | | |
| 1 0 | A B C D E F G H D J | 1 | ABCDEFGHIJ | | |
| 2 0 | ABCDEFGHIJ | 2 | ABCDEFGHIJ | | |
| 3 0 | A B C D E F G H D J | 3 | ABCDEFGHIJ | | |
| 4 0 | ABCDEFGHIJ | 4 | ABCDEFGHIJ | | |
| 5 (| A B C D E F G H D J | 5 | ABCDEFGHIJ | | |
| 6 | A B C D E F G H I J | 6 | ABCDEFGHIJ | | |
| 7 0 | ABCDEFGHIJ | 7 | ABCDEFGHIJ | | |
| 8 | ABCDEFGHIJ | 8 | ABCDEFGHIJ | | |
| 9 0 | A B C D E F G H I J | 9 | ABCDEFGHIJ | | |
| 10 0 | ABCDEFGHIJ | 10 | ABCDEFGHIJ | | |

| V 3 1 | Feed Identification | | HARDEN S |
|-------|---------------------|----|------------|
| W | Feed | V | Class. |
| 1 | ABCDEFGHIJ | 1 | ABC |
| 2 | ABCDEFGHIJ | 2 | (A) (B) (C |
| 3 | ABCDEFGHIJ | 3 | ABC |
| 4 | ABCDEFGHIJ | 4 | (A) (B) (C |
| 5 | ABCDEFGHIJ | 5 | A B C |
| 6 | ABCDEFGHIJ | 6 | ABC |
| 7 | ABCDEFGHIJ | 7 | (A) (B) (C |
| 8 | ABCDEFGHIJ | 8 | (A) (B) (C |
| 9 | ABCDEFGHIJ | 9 | (A) (B) (C |
| 10 | ABCDEFGHIJ | 10 | (A) (B) (C |





IDENTIFICATION LISTS



LIVESTOCK BREEDS

| | Beef |
|--------------------|--|
| Angus | British breed with highest number of registrations in the US. Noted for mothering ability and carcass marbling |
| Brahman | Bos Indicus breed known for heat and insect tolerance. |
| Brangus | Developed in the US, made up of 3/8 Brahman and 5/8 Angus. Bred for heat tolerance of Brahman and maternal and carcass traits of Angus. |
| Charolais | High growth breed originally from France known for muscle and cutability. |
| Chianina | Developed in Italy. Known for size and growth, referred to as the tallest breed of cattle. |
| Gelbvieh | Developed in Germany, originally considered a dual-purpose breed. Has good carcass cutability and relatively early puberty. |
| Hereford | Can be horned or polled. Hardy British breed which in recent years combined polled and horned associations. |
| Limousin | Developed in France with moderate growth rate and frame size and high carcass cutability. |
| Maine- Anjou | Developed in France by crossing the Durham and the Mancelle breeds. Has good muscling. |
| Red Angus | From Scotland. Considered maternal with good terminal-related performance. |
| Red Poll | Originally developed as a dual-purpose breed in England that would possess moderate size, would fatten quickly and also produce a good milk supply. |
| Salers | Found in ancient cave drawings dated 7,000 years ago in France. Considered to be one of the oldest and most genetically pure of all of the European breeds. |
| Santa Gertrudis | Developed in Texas by crossing the Brahman (3/8) and Shorthorn (5/8) breeds. Became first official breed developed in the US. Known for heat tolerance and maternal. |
| Shorthorn | Originated in England, with three distinct color patterns, considered a maternal breed. |
| Simmental | Originally developed in Switzerland for meat, milk and draft. Now noted for high growth rate, milking ability, and carcass cutability. |
| Texas Longhorn | Due to its natural selection and adaptation, this breed is considered to be a survival of the fittest breed. Known for being hardy, aggressive and adaptable. |

| | Sheep |
|-------------|--|
| Cheviot | Small sized meat breed noted for its hardiness from Scotland |
| Columbia | Large frame US breed, developed from Lincolns and Rambouillets |
| Corriedale | Large frame wool breed developed from crossing Lincoln or Leicester rams on Merino ewes |
| Dorper | Primarily a mutton sheep, this breed was developed in South Africa and is one of the most fertile of sheep breeds. |
| Dorset | English, white face, meat breed known for out of season breeding |
| Finn sheep | Lighter muscled breed from Finland noted for being prolific |
| Hampshire | Large framed, English, meat breed with black face and wool cap |
| Katahdin | A hair sheep breed developed in the United States. |
| Lincoln | Although not a popular breed in the US, this breed is unique because the fleece of is carried in heavy locks that are often twisted into a spiral near the end |
| Montadale | Breed developed from Columbia and Cheviot cross noted for high quality carcasses and excellent wool |
| Merino | Very fine fleece breed with heavy wool production from Spain |
| Oxford | This breed originated as the result of crossing Cotswold and Hampshire and produces the heaviest fleece of any of the Down breeds. |
| Rambouillet | Wool breed developed in France and Germany from Merino breed |
| Shropshire | Breed originating in England known as one of the heaviest wool producers among the medium wool breeds |
| Southdown | This breed is early maturing with good lambing ability and average milk production. They excel in a crossbreeding program in their ability to produce meaty lamb carcasses at light weights and hot-house lambs. |
| Suffolk | Large framed, black faced breed known for high growth rate and carcass cutability from England |
| Tunis | This is a medium sized meat type breed that is also known for their disease resistance and their ability to remain productive on marginal land. |



| | Swine | | | |
|----------------------|---|--|--|--|
| Berkshire | Originally from England noted for pork quality, tenderness and marbling. | | | |
| Chester White | Known as a maternal breed with high conception rates, developed in PA. | | | |
| Duroc | Noted for high growth rate, durability and leanness, developed in New Jersey and New York. | | | |
| Hampshire | Terminal sire breed with unique color patterns that is noted for muscle and cutability. | | | |
| Hereford | Dual purpose breed, red with white markings on head and lower body. | | | |
| Landrace | Noted for large litters and large droopy ears, generally refined in bone. | | | |
| Pietrain | Noted for extreme muscle volume and shape, with a high propensity for stress which is related to pork quality concerns. | | | |
| Poland China | Lean, heavy muscled, black breed with six white points and droopy ears from Ohio. | | | |
| Spot | Black and white, developed in US, noted for rapid growth and as aggressive breeders | | | |
| Tamworth | th Red, rugged, active breed known as a lean type of hog with long neck, snout and leg. | | | |
| Yorkshire | Has erect ears, known as the "mother breed". | | | |
| | Goat | | | |
| American Cashmere | Originated in Australia/New Zealand, primarily used for fiber and cashmere production. Small to medium sized and varied in color. | | | |
| Angora | The most valuable characteristic of this breed as compared to other goats is the value of the mohair that is clipped | | | |
| Boer | A prominent strong head with brown eyes and a gentle appearance. Nose with a gentle curv wide nostrils, and well-formed mouth with well-opposed jaws. Body should be boldly three dimensional: long, deep, wide | | | |
| Kiko | Known for hardiness and ability to achieve substantial weight gains when under natural conditions without supplementary feeding. Large framed, generally white with a coat that ranges from slick in summer to flowing hair when run in mountain country in winter. | | | |
| Nubian | Developed in England, heat tolerant and adaptable, extended breeding season. They have varie coloration but mainly red or tan with short hair, roman nose, and long ears. | | | |
| Pygmy | Originally exported from Africa to zoos in Sweden and Germany where they were on display as exotic animals. | | | |
| Tennessee Wooden | Myotonic, their muscles become extremely stiff when they are frightened. This hereditary condition makes the goat very muscular. | | | |



Leg



Livestock Equipment List

| LIVESTUGK EQUIPINENT LIST | | | | |
|----------------------------|--------------------------|----------------------------|-------------------------|--|
| Ammonia Sensor | Antiseptic Applicator | Balling Gun | Beef Cattle Frame Stick | |
| Beef Halter | Breeding Catheter | Cattle Clippers | Cattle Al Gun | |
| Cauterizing Tail Docker | Curry Comb | Dehorner | Disposable Syringe | |
| Drench Gun | Ear Notchers | Ear Tag Pliers | Elastrator | |
| Electric Fence Tester | Electronic ID Tag | Emasculator | Ewe Spoon | |
| Foot Rot Shears | Forage Probe | Freeze Branding Iron | Heat Detection Patch | |
| Hog Snare | Hoof Chisel | Hoof Trimmer | Intravenous Set | |
| Knife Steel | Lamb Boot | Lambe Tube Feeder | Nasal Canula | |
| Needle Teeth Clippers | Nipple Waterer | Nose Lead | Pig Obstetrical Forceps | |
| Pig Resuscitator | Pistol Grip Syringe | Prolapse Ring Retainer | Ralgro Implant Gun | |
| Ram Marking Harness | Rumen Magnet | Scalpel | Scotch Comb | |
| Shearer's Screwdriver | Sheep Shears | Swine Breeding Spirette | Tattoo Pliers | |
| Test Tube | Transfer Needle | Vacutainer | Wool Card | |

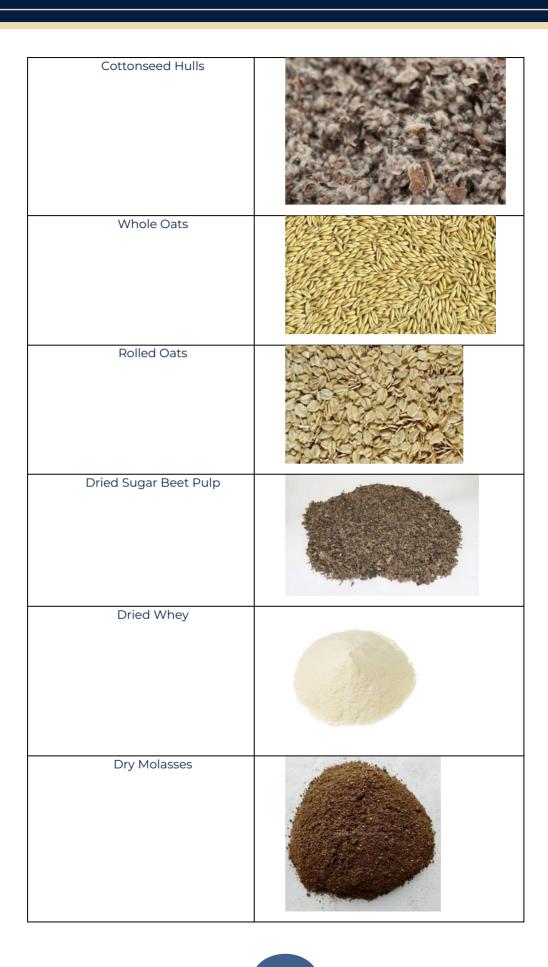
Livestock Skillathon Feedstuffs Classifications

| | Energy | |
|--------------------|--------|--|
| Whole Shelled Corn | | |
| Cracked Corn | | |













| Protein | | |
|--------------------------|--|--|
| Urea | | |
| Corn Gluten Feed Pellets | | |
| Corn Gluten Meal | | |
| Distiller's Grain | | |











| Mineral | | |
|---------------------|--|--|
| Dicalcium Phosphate | | |
| Ground Limestone | | |
| Trace Mineral Salt | | |
| White Salt | | |





Retail Meat ID List

| Species | Primal | Retail | Cookery |
|---------|---------|------------------------------|-----------|
| Beef | Chuck | Top Blade Steak (Flat Iron) | Dry |
| Beef | Flank | Flank Steak | Dry/Moist |
| Beef | Loin | Porterhouse Steak | Dry |
| Beef | Loin | T-bone Steak | Dry |
| Beef | Loin | Top Loin Steak | Dry |
| Beef | Loin | Tenderloin Steak | Dry |
| Beef | Plate | Short Ribs | Moist |
| Beef | Rib | Rib Roast | Dry |
| Beef | Rib | Ribeye Steak, Bnls | Dry |
| Beef | Round | Round Steak, Bnls | Moist |
| Beef | Round | Bottom Round Roast | Dry/Moist |
| Beef | Round | Eye Round Steak | Dry/Moist |
| Beef | Round | Tip Roast - Cap Off | Dry/Moist |
| Beef | Round | Top Round Steak | Dry |
| Beef | Various | Cube Steak | Dry/Moist |
| Beef | Various | Beef for Stew | Moist |
| Beef | Various | Ground Beef | Dry |
| Beef | Variety | Heart | Dry/Moist |
| Beef | Variety | Kidney | Dry/Moist |
| Beef | Variety | Liver | Dry/Moist |
| Beef | Variety | Oxtail | Moist |
| Beef | Variety | Tongue | Dry/Moist |
| Pork | Ham/Leg | Pork Fresh Ham Center Slice | Dry/Moist |
| Pork | Ham/Leg | Pork Fresh Ham Shank Portion | Dry/Moist |
| Pork | Ham/Leg | Smoked Ham, Center Slice | Dry |
| Pork | Loin | Blade Chops | Dry/Moist |
| Pork | Loin | Blade Roast | Dry/Moist |
| Pork | Loin | Center Rib Roast | Dry |
| Pork | Loin | Country Style Ribs | Dry/Moist |
| Pork | Loin | Smoked Loin Chop | Dry |
| Pork | Loin | Loin Chops | Dry |





| Pork | Loin | Smoked Rib Chop | Dry |
|------|------------|-----------------------|-----------|
| Pork | Loin | Rib Chops | Dry |
| Pork | Loin | Butterflied Chop Bnls | Dry |
| Pork | Shoulder | Arm Roast | Dry/Moist |
| Pork | Shoulder | Blade Boston Roast | Dry/Moist |
| Pork | Shoulder | Blade Steak | Dry/Moist |
| Pork | Side/Belly | Fresh Side | Moist |
| Pork | Side/Belly | Slab Bacon | Dry |
| Pork | Side/Belly | Sliced Bacon | Dry |
| Pork | Spareribs | Pork Spareribs | Dry/Moist |
| Pork | Variety | Heart | Dry/Moist |
| Pork | Variety | Liver | Dry/Moist |
| Pork | Variety | Tongue | Dry/Moist |
| Lamb | Loin | Loin Chops | Dry |
| Lamb | Rib | Rib Chops | Dry |
| Lamb | Rib | Rib Chops Frenched | Dry |
| Lamb | Rib | Rib Roast | Dry |
| Lamb | Shoulder | Arm Chops | Dry/Moist |
| Lamb | Shoulder | Blade Chops | Dry/Moist |
| Lamb | Leg | Center Slice | Dry |
| Lamb | Variety | Heart | Dry/Moist |
| Lamb | Variety | Kidney | Dry/Moist |
| Lamb | Variety | Liver | Dry/Moist |
| | | | |

Tongue



Lamb

Variety



Dry/Moist

Reference Material



Animal Science Course Standards

Domain Animal Husbandry and Welfare

Core Standard: Students demonstrate management techniques that ensure animal welfare and analyze procedures to ensure animal safety while maintaining safe animal products.

- AS-2.2 Analyze and document animal welfare procedures used to ensure safety and maintain low stress when moving and restraining animals.
- AS-2.3 Analyze and document animal husbandry practices and their impact on animal welfare.
- AS-2.4 Utilize tools, technology and equipment to perform animal husbandry and welfare tasks.
- AS-2.5 Analyze consumer concerns with animal production practices relative to human health.

Domain Animal Nutrition

Core Standard: Students analyze the nutritional needs of animals and evaluate feed rations for effectiveness.

- AS-3.1 Differentiate between nutritional requirements of animals in different growth stages and production systems (e.g., growth, maintenance, gestation, natural, organic, etc.).
- AS-3.2 Correlate a species' nutritional needs to feedstuffs that could meet those needs.
- AS- 3.3 Determine the relative nutritional value of feedstuffs by evaluating their general quality and condition.
- AS-3.4 Appraise the adequacy of feed rations using data from the analysis of feedstuffs, animal requirements and performance.
- AS-3.5 Compare and contrast methods that utilize feed additives and growth promotants with production practices that do not, (e.g., organic versus conventional production methods).
- AS-3.6 Utilize tools and equipment to perform animal nutrition tasks.
- AS-3.7 Analyze and apply information from a feed label and feeding directions to feed animals.

Domain Animal Reproduction

Core Standard: Students evaluate animals for reproduction readiness and soundness and apply scientific principles to breeding programs.



- AS-4.1 Analyze the functions of major organs in the male and female reproductive systems.
- AS-4.2 Assess and describe factors that lead to reproductive maturity.
- AS-4.3 Evaluate reproductive problems that occur in animals.
- AS-4.4 Compare and contrast the use of genetically superior animals in the production of animals and animal products.
- AS-4.5 Demonstrate how to determine probability trait inheritance in animals.
- AS-4.6 Analyze how DNA analysis can detect genetic defects in breeding stock
- AS- 4.7 Analyze the care needs for breeding stock in each stage of growth.
- AS-4.9 Develop an understanding of artificial insemination, embryo transfer, and cloning.
- AS-4.10 Analyze the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.
- AS-4.11 Compare and contrast quantitative breeding value differences between genetically superior animals and animals of average genetic value.

Domain Anatomy and Physiology

Core Standard: Classify animals according to taxonomic classification systems and use (e.g., agricultural, companion, etc.).

- AS-6.1 Explain how animals are classified using a taxonomic classification system.
- AS-6.2 Appraise and evaluate the economic value of animals for various applications in the agriculture industry.
- AS-6.3 Analyze the visual characteristics of an animal or animal product and select correct classification terminology when referring to companion and production animals.

Core Standard: Apply principles of comparative anatomy and physiology to uses within various animal systems.

AS-7.1 Analyze the functions of each animal cell structure.

 AS-7.3 Compare and contrast animal cells, tissues, organs, body system types and functions among animal species.

Core Standard: Select and train animals for specific purposes and maximum performance based on anatomy and physiology.

- AS-8.1 Compare and contrast desirable anatomical and physiological characteristics of animals within and between species.
- AS-8.2 Compare and contrast procedures to sustainably and efficiently develop an animal to reach its highest performance potential with respect to its anatomical and physiological characteristics.
- AS-8.3 Evaluate and select products from animals based on industry standards.

Domain Animal Health and Safety

Core Standard: Students design programs to prevent animal diseases, parasites and other disorders and analyze biosecurity measures utilized to ensure animal welfare.

- AS-9.1 Describe and demonstrate the proper use and function of specific tools and technology related to animal health management.
- AS-9.2 Perform simple health-check evaluations on animals and practice basic emergency response procedures related to animals.
- AS-9.3 Identify and describe common illnesses and disorders of animals based on symptoms and problems caused by wounds, diseases, parasites and physiological disorders.
- AS-9.4 Research and analyze data to evaluate preventive measures for controlling and limiting the spread
 of diseases, parasites and disorders among animals.
- AS-9.5 Assess the safety and effectiveness of facilities and equipment used for surgical and nonsurgical veterinary treatments and procedures.
- AS-9.6 Analyze procedures at the local, state and national levels to ensure biosecurity of the animal industry.
- AS-9.7 Analyze the health risk of different zoonotic diseases to humans and identify prevention methods.



Students should be knowledgeable about all areas of the livestock industry.

Industry Exam:

- o Health- types of diseases, methods of treatment, signs of disease, normal vital signs
- o Digestive Systems and Nutrition- Nutrient classes and functions, similarities and differences between various digestive systems found in livestock
- o Anatomy and Physiology- functions of each body system; major parts of each system
- o Breeding and Reproduction- knowledge of gestation, parturition, signs of estrus, dvstocia. etc.
- o Genetics- understand terms like homozygous, heterosis, determining probability of traits and their heritability
- Meats- major cuts of each species, common characteristics of each type of meat; carcass terms
- Marketing- how livestock are marketed; prime times for the sale of livestock; common terms
- Breeds- common characteristics; maternal vs terminal

• Quality Assurance Exam:

- Reading Drug Labels- able to pull key information from the label
- Calculating Dosage of Medications
- o Selection of Proper Drug for Scenario
- o Common conversions
- o Knowledge of Proper Methods of Injection
- Understanding of withdrawal times