Texas 4-H Swine Skill-A-Thon
2016 Study Guide

RULES: The Swine Skill-a-Thon will consist of a preliminary round with a written exam and four "skills" stations. The top five individuals in each division will then compete in the finals. Seniors and Intermediates will give a five minute impromptu presentation on being an animal advocate, and Juniors will take part in a five minute interview with a series of questions being asked.

1) AGE DIVISIONS
Contestants must be currently enrolled 4-H member, and academically eligible.
Divisions are:

Juniors – 3rd – 5th grade
Intermediate – 6th – 8th grade
Seniors – 9th – 12th grade

2) No late entries will be accepted. Substitutions must be verified by the County Extension Agent using a substitution form.

3) Substitutions
Substitutions should be used only as a means of keeping an entry active when members have been forced to drop out for unexpected reasons (i.e. major illness, death or other conflicts). All substitutions must be approved by the county Extension agent in charge of the project area. The form must be signed, completed and brought to the contest site. Once the contest check in closes no substitutions may be made.

4) Contest

Preliminary Rounds

A) Written Exam - 100 points per person
Questions are derived from the vast amount of information available in the study guides as well as from knowledge and skills that can be obtained actually raising the project pig. The Exam will be made up of multiple choice or True/ False questions. The test may have 100, 1 point questions or 50, 2 point questions. The exam will be administered using questions from the following sources.
1) Swine Quiz Bowl Question Bank – http://texas4-h.tamu.edu/project_swine
2) Texas FFA Livestock CDE Test Bank - (Questions pertaining to Swine) http://www.texasffa.org/%5Cdocs/Livestock+Exam+Key.pdf

B) <u>Skills Stations - 100 points per person</u>
Four skill stations will be done individually by contestants. A score sheet will be provided with a total of 25 points for each station. The evaluator/station moderator can allow for partial credit at each station.

1) Identifying External or Internal parts of a Swine:
2) Ear Notching
3) Projecting and Calculating Weigh Gain
4) Feedstuff Identification and Nutritional Purpose
5) Pork Retail Meat Cut Identification
6) Reading and Interpreting Registration Papers
7) Reading & Following Feed & Medication Labels
8) Identifying Tools and Equipment used in the swine Industry
9) Breed Identification and Classification

Finals

C) <u>Interview/Presentation - 100 points per individual</u>
The top five individuals in each division will be called back for the finals. Juniors will take part in a five minute interview over the swine industry. A series of questions will be asked and they will be ranked based on their ability to accurately and confidently answer the questions. Intermediates and Seniors will be assigned a topic related to the swine industry and asked to prepare a five minute presentation related to that topic. They will have fifteen minutes to prepare. The Speech or Interview topic:
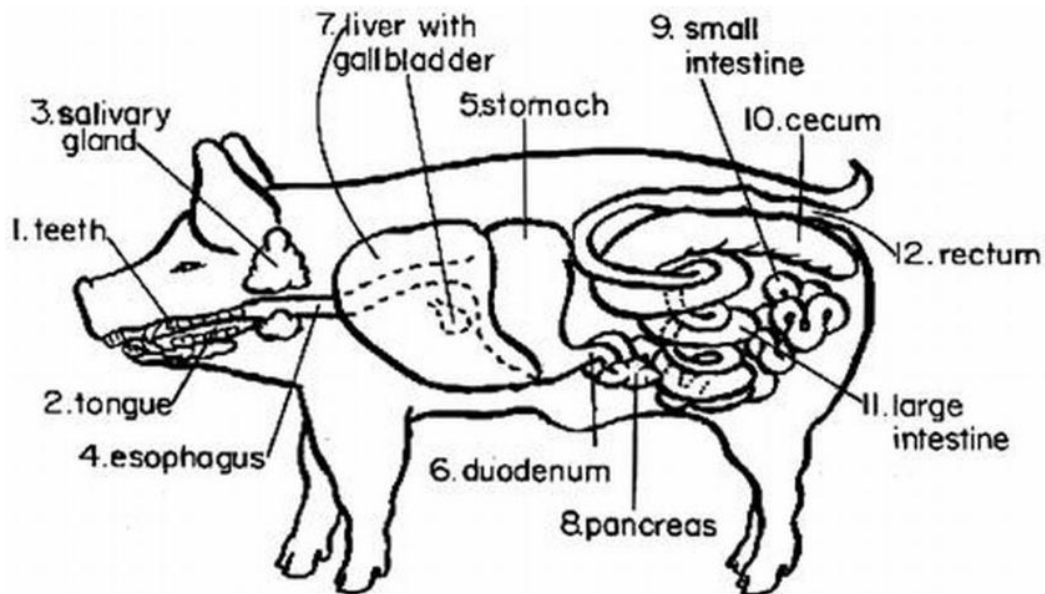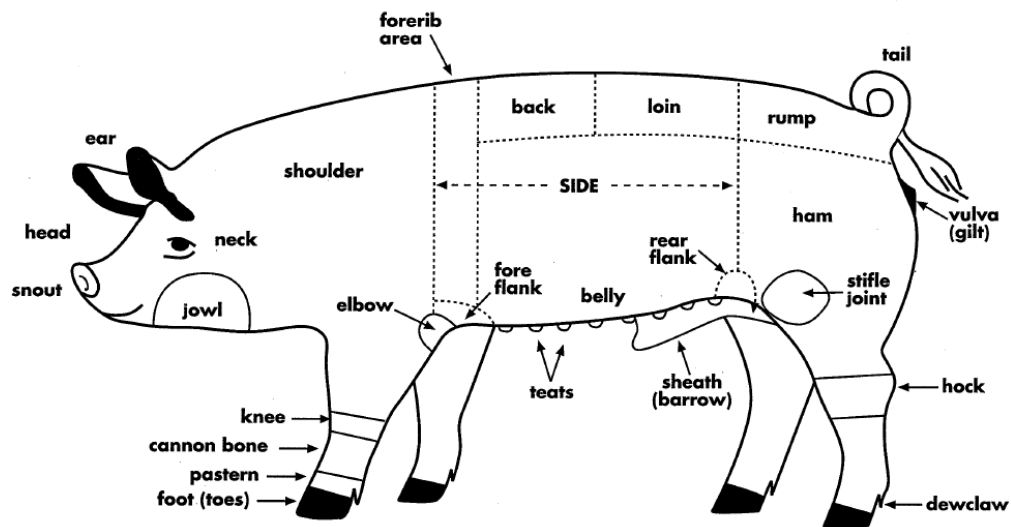
Being an Animal/Agriculture Advocate

Thinking points:
- Explaining advantages of biotechnology
- Explain how anti-biotics and vaccination make animals healthier
- Why meat is important for our diet
- What is organic meat and grains
- What is a genetically modified organism (GMO)
- How livestock production uses the most humane and safest techniques in producing meat
- How we know we have a safe wholesome product

Skills Stations Guidelines:

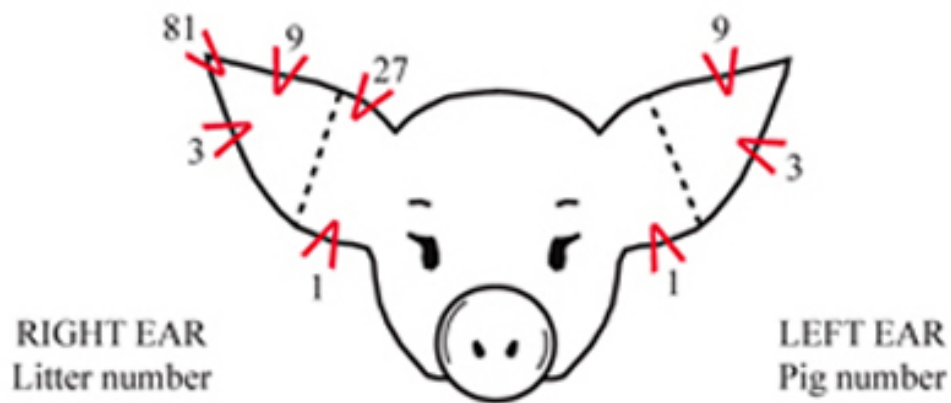**Identifying the Internal & External Parts of a Swine**

The ability to properly identify the parts of a swine is essential knowledge to swine management. This ability will allow you to quickly and efficiently detect health issues including external injuries, or internal problems. The skills station this year will focus on external body part identification, and the digestive system.

Ear Notching

During the ear notching skills station, youth will be asked to utilize a set of ear notchers to properly notch a model of a pig's ear. They may also be asked to read the notches of a pig that has already been notched.

Ear notching is a system that has been utilized for many years for the purpose of properly identifying swine. The pig's right ear is utilized to record the litter number. The litter mark ear is divided into five sections, and each section has a numerical value, either 1, 3, 9, 27, or 81 (see image below). Each section, except for 81, can have 1 or 2 notches only. All offspring of the same litter will have identical litter numbers in their right ear. The left ear is used to record the pig's individual number. Each pig will have different notches in the left ear. The left ear is divided into three sections, with values of 1, 3, and 9 (see image below). Ear notches should always be read with the litter number first, followed by the individual number.

RIGHT EAR
Litter number

LEFT EAR
Pig number

Projecting & Calculating Weight Gain

Understanding and projecting weight gain is an important part of both 4-H swine projects and commercial swine operations. Individuals participating in the swine project need to be able to evaluate how much their project animal will need to gain from the time of purchase until the show date. This should be determined using the following formula:

(Desired Show Weight) – (Current Weight) = (Pounds needed to Reach Desired Weight)
Pounds Needed to Reach Desired Weight) / (Number of Days Until Show) = (Pounds of Gain per Day)

Hogs usually need to eat 4 to 5 pounds of feed for every 1 pound of gain. The average daily gain of market hogs is 1.5 to 1.8 pounds per day. It is important to understand that expecting a hog to less than 1 pound each day is not a realistic expectation if that hog is to look its best on show day, nor is expecting a hog to sustain weight gains over 2.5 pounds per day in order to reach a minimum weight at the show.

Feed Identification and Nutritional Purposes

The skill of properly identifying feedstuffs and additives, as well as understanding their purpose in the feed ration will enable you to ensure that your swine project is receiving the proper nutrients. It will also allow you to make critical feeding adjustments to alter the way your project puts on condition, or the speed at which your project grows. Below are the various feeds that will be selected from for the swine skillathon contest. Participants will be asked to identify between 5 and 10 samples and categorize the group of nutrients to which they belong (energy, mineral, or proteins)

Energy	Protein	Mineral
Whole Corn	Soybean Meal	Di-calcium Phosphate
Cracked Corn	Blood Meal	White Salt
Wheat	Fish Meal	Trace Mineral Salt
Grain Sorghum (Milo)	Dried Whey	Ground Limestone (Calcium Carbonate)
Barley	Dried distillers grain	
Oats		
Rye		
Wheat Middlings		
Dried distiller grain		

A helpful website for studying these feeds and their uses is:
http://www.ca.uky.edu/agripedia/agmania/feedid/

Pork Retail Meat Cut Identification

Profitability in the pork industry is linked to the amount and quality of the retail meat cuts that can be produced. As a result it is important for 4-H swine project members to be able to identify high value cuts of meat.

Senior contestants in the Swine Quiz Bowl should refer to the following website for a list of cuts that could appear at this skills station: http://aggiemeat.tamu.edu/judging/id4H.html (Pork Cuts Only) Participants will only be required to list the common name of the meat cut. (For Example: Butterfly Chops)

Junior and Intermediate contestants in the Swine Quiz Bowl should refer to the following website for a list of cuts that could appear at this skills station: http://aggiemeat.tamu.edu/judging/id4Hinter.html (Pork Cuts Only) Participants will only be required to list the common name of the meat cut. (For Example: Butterfly Chops)

Reading & Interpreting Registration Papers:

To implement a successful genetics program, one must be able to read and understand registration papers. It is important to properly identify an offspring's dam, sire, grand dam, grand sire, etc… There is also a great deal of information related to identifying the pig, and identifying its EPD numbers that can be derived from the registration papers. Below is a sample set of registration papers and a list of items you should be able to answer questions about during this skills station.

What is the registration number of this animal?
What is the sex of this animal? (Gilt, Barrow, Boar)
Who is the Sire of this animal?
Who is the Dam of this animal?
Who is the maternal grand sire and who is the paternal grand sire of this animal?
Who is the maternal grand dam and who is the paternal grand dam of this animal?
What is this animal's birth date?
What is this animal's ear notch?
Who is the owner of this animal?
Who is the breeder of this animal?
How many littermates did this animal have?
Where all of the littermates born alive?
What breed of pig is this animal?

Reading and Following Feed and Medication Labels

Any medicine or feed you give your animals will affect their health in some way, either positively or negatively. Ultimately, the health of your animals may affect consumers. When deciding how to care for your animals, you must make decisions responsibly so that you do no harm to the animals or to consumers. One of the most important things you must learn is how to read feed tags and medication labels. Below is an example of a medication label and information you should be able to derive from examining it. (Examples borrowed from the Quality Counts Book)

Medication Insert

Name of Product	**Omnibiotic**
Active Ingredients	(Hydrocillin in Aqueous Suspension)

Directions for use: See package insert

For use in beef cattle, lactating
and non-lactating dairy cattle, swine and sheep

What can this product be used to treat

Read entire brochure carefully before using this product
For Intramuscular Use Only

Active Ingredients: Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in aqueous base.

Indications: What is this product designed to treat or do

Indications: Cattle — bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. **Swine** — erysipelas, pneumonia. **Sheep** — foot rot, pneumonia, mastitis. And other infections in these species caused by or associated with hydrocillin-susceptible organisms.

Recommended Daily Dosage
The usual dose is 2 ml per 100 lb of body weight given once daily.
Maximum dose is 15 ml/day.

What dose should be administered

Body Weight	Dosage
100 lb	2 ml
300 lb	6 ml
500 lb	10 ml
750 lb or more	15 ml

Continue treatment for 1 or 2 days after symptoms disappear.

Caution: 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. **2.** If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. **3.** Treated animal should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. **4.** Omnibiotic must be stored between 2° and 8°C (36° and 46°F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

Cautions: What type of injection should be administered

Observation after treatments is required for this medication

Must be refrigerated

Warning: Milk that has been taken from animals during treatment and for 48 hours (four milkings) after the last treatment must not be used for food. The use of this drug must be discontinued 30 days before treated animals are slaughtered for food.

Withdrawal period

10 → **How supplied:** Omnibiotic is available in vials of 100 ml.

How is the product supplied

Pig & Cattle Grower

Medicated
for horses, rabbits, cattle, goats, poultry and swine

Administer Calf-Manna as a nutritional supplement for better growth and performance. Calf-Manna's four main ingredients—high-quality proteins, digestible carbohydrates, anise and brewer's dried yeast—meet the needs of many animals by providing for more growth, energy, palatability, and better digestion.

Guaranteed Analysis

Crude Protein	min. 25.0%
Lysine	min. 1.4%
Methionine	min. 0.3%
Crude Fat	min. 3.0%
Crude Fiber	min. 3.0%
Crude Fiber	max. 6.0%
Acid Detergent Fiber	max. 10.0%
Calcium	min. 0.7%
Calcium	max. 1.2%
Phosphorus	min. 0.6%
Salt	min. 0.5%
Salt	max. 1.0%
Sodium	min. 0.2%
Sodium	max. 0.4%
Copper	min. 15 ppm
Copper	max. 35 ppm
Selenium	min. 0.1 ppm
Zinc	min. 125 ppm
Vitamin A	min. 20,000 IU/lb

Ingredients

Soybean Meal, Corn, Hominy Feed, Feeding Oatmeal, Dried Whey, Dehydrated Alfalfa Meal, Linseed Meal, Brewer's Dried Yeast, Vegetable Oil, Fenugreek Seed, Anise Oil, Calcium Carbonate, Monocalcium Phosphate, Dicalcium Phosphate, Salt, Sulfur, Iron Oxide, Ferrous Carbonate, Ferrous Sulfate, Copper Oxide, Copper Sulfate, Manganous Oxide, Zinc Oxide, Sodium Selenite, Cobalt Carbonate, Calcium Iodate, Vitamin A Supplement, Vitamin D_3 Supplement, Vitamin E Supplement, Choline Chloride, Thiamine Mononitrate, Niacin Supplement, Riboflavin Supplement, Calcium Pantothenate, Pyridoxine Hydrochloride, Vitamin B_{12} Supplement, Folic Acid, Biotin, Calcium Propionate (a preservative).

Feeding Instructions

Beef calves	10% of creep ration
Show cattle	1–2 lb/day
Brood cows & bulls	1 lb/day
Baby pigs	⅛–¼ lb/day
Show hogs	½–1 lb/day
Gestating sows	¼–½ lb/day
Lactating sows	½–¾ lb/day
Boars	¼–½ lb/day

Manufactured by:
Manna Pro Corporation
Net Weight 50 pounds (22.7 kilograms)

Reading a Feed Tag

1. What is the main ingredient in this feed?

   _____

2. What is the crude protein level?

   _____

3. What is the minimum crude fat level of this diet?

   _____

4. Is ground milo included in the ingredients of this diet?

   _____

5. How much supplement should be fed to show cattle? Show hogs?

   _____

6. What is one of the four main ingredients found in this supplement?

   _____

7. What are the minimum and maximum calcium levels of this diet?

   _____

Identifying Tools & Equipment Used in the Swine Industry

Participants must also be able to identify both actual samples and pictures of equipment used in the swine industry. 5 to 10 samples will be provided at this skills station of tools and equipment used in the show industry and the commercial swine industry. Below is a list of possible products that will appear at this skills station.

Show Whip	Clip in Feeder
Rice Root Brush	Grill Brick
Soft Bristle Brush	Pump Up Sprayer
Foam Tipped Insemination Rod	Clippers
Spirette Insemination Rod	Wood Shavings
Farrowing Crate	Syringes
Heat Lamp	Needles
Ear Notchers	Feed Pans
Scales	Nipple Waterers
Sorting Panels	Cup Waterers

Swine Breeds
Identification & Classification

Participants must be able to identify the following breeds of Swine: Berkshire, Chester, Duroc, Hampshire, Landrace, Poland China, Spot, Yorkshire, Dark Crossbred, & Light Crossbred. In addition to identifying breed characteristics, participants must also identify traits that would disqualify an animal from been classified as a certain breed. Pictures may be viewed at: http://www.ansi.okstate.edu/breeds/swine/

Berkshire: 1.Black and white with erect ears exhibiting Berkshire character.
              2.A Berkshire must have white on all four legs, face and tail (unless tail is docked). One of the white leg points may also be missing.
              3.Must be ear notched within seven days of birth.
              4.A Berkshire must NOT have a solid white or a solid black face from ears forward.
              5.A Berkshire must NOT have a solid black nose (rim of nose).
              6.White is allowed on the ears, but NO solid white may appear on the ears.
              7.Occasional splash of white may appear on the body.

Chester: 1.Must possess Chester White Breed characteristics.
              2.Must be ear notched within seven days of birth.
              3.Must be solid white in color, no color on the skin larger than a silver dollar, no colored hair.
              4.Any skin pigmentation other than white that exceeds five in number are disqualified.
              5.Ears must be down and medium size.
              6.Any signs of weighted ear tags or evidence of past existence of such ear tags are determined to be not permissible and are grounds for disqualification.

Duroc: 1.Must be red in color and possess Duroc Breed character. (ears must be down and medium size.
              2.Must be ear notched within seven days of birth.
              3.Must NOT have any white hair located on the animal.
              4.Must NOT have any black hair.
              5.Must NOT have more than three black spots on the skin and none of these spots can e larger than two inches in diameter.
              6.Must NOT have any shading or indication of a belt

Hampshire: 1.Must be black in color with a white belt starting on the front leg. The belt may partially or totally encircle the body.
              2.Must possess Hampshire Breed character. (ears must beerect and not rounded)
              3.Must be ear notched within seven days of birth.
              4.Must NOT have any white hair or indications of streaking onthe forehead.
              5.Must NOT have any red hair.

Landrace: 1. Must be white in color and possess Landrace Breed character. (ears must be down)
2. Must be ear notched within seven days of birth.
3. Must NOT allow any color hair other than white.
4. Must NOT allow more than three spots of skin pigmentation.
5. Must NOT allow any spot of skin pigmentation larger than one U.S. minted quarter

Poland China: 1. Must possess Poland China Breed characteristics.
2. Must be ear notched within seven days of birth.
3. Must be black with six white points (face, feet and switch) Note* (tail docking is permissible) with an occasional splash of white on the body. A hog may not possess more than one solid black leg and be determined as Poland China.
4. Must have ears down.
5. Must not have evidence of a belt formation.
6. Cannot have red or sandy hair and/or pigmentation.
7. Hogs that have weighted ear tags or evidence of tampering of ears with possible ear tags are ineligible.

Spot: 1. Black and white in color.
2. Possesses Spotted breed character.
3. Ears cannot be erect.
4. No red tinted or sandy brown spots.
5. No solid black head from ears forward.
6. No distinct white belt pattern (hair or skin) encircling and extending down and on to each shoulder.
7. Any signs of weighted ear tags or evidence of past existence of such ear tags are determined to be not permissible and are grounds for disqualification.

Yorkshire: 1. Must be white in color and possess Yorkshire Breed character. (ears must be erect)
2. Must be ear notched within seven days of birth.
3. Must NOT have any colored hair other than white.
4. Must NOT have colored skin pigmentation larger than one U.S. minted silver dollar.
5. Must NOT have masking above the eyes larger than a silver dollar.

Dark Crossbred: Barrows with undiluted black, and/or red pigmentation, (i.e. not sandy, rusty, or blue) comprising at least 20% of total body area, shall be considered a Dark Cross. These barrows may be black or red belted, black patched or spotted, with Poland China, Hampshire, Berkshire, or Spot appearance. Barrows with only blue pigmentation are NOT considered Dark Crosses.