

EXPL®RE



Texas 4-H Swine Project *Exploring Market Barrows and Breeding Gilts*



texas4-h.tamu.edu

The members of Texas A&M AgriLife will provide equal opportunities in programs and activities, education, and employment to all persons regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation or gender identity and will strive to achieve full and equal employment opportunity throughout Texas A&M AgriLife.



EXPL®RE

TEXAS 4-H SWINE PROJECT



Description

The Texas 4-H Explore series allows 4-H volunteers, educators, members, and youth who may be interested in learning more about 4-H to try some fun and handson learning experiences in a particular project or activity area. Each quide features information about important aspects of the 4-H program, and its goal of teaching young people life skills through handson experiences. Additionally, each guide contains at least six learning experiences, which can be used as a project guide, or as activities for six different 4-H meetings.

Purpose

Texas 4-H is designed to develop the youth of our state into productive adult citizens. The 4-H Program uses a non-formal educational process of engaging youth in an "learning by doing" process. This includes hands-on opportunities, participation in workshops and clinics conducted by volunteer leaders or professionals, as well as competitive experiences which allow 4-H members to demonstrate the knowledge they have gained. Through this entire process, the youth are learning key life skills such as working with others, teamwork, cooperation, and goal setting. Through all experiences, youth get to interact with adult volunteers and county Extension agents.

What is 4-H?

4-H members across the nation are responding to challenges every day in their communities and their world.

As the youth development program of the Cooperative Extension System of land-grant universities, 4-H is the nation's largest youth development organization, empowering six million young people throughout the United States. Cooperative Extension of 1862 and 1890 land-grant universities provide leadership to engage young people in 4-H in all 3,007 counties of the United States. The impact of the Cooperative Extension partnership is profound, bringing together National Institute of Food and Agriculture of USDA, land grant universities and county government to resource learning opportunities for youth.

Through America's 110 land-grant universities and its Cooperative Extension System, 4-H reaches every corner of our nation—from urban neighborhoods to suburban schoolyards to rural farming communities.

With a network of more than 6 million youth, 600,000 volunteers, 3,500 professionals, and more than 25 million alumni, 4-H helps shape youth to move our country and the world forward in ways that no other youth organization can.

Texas 4-H

Texas 4-H is like a club for kids and teens ages 5-18, and it's BIG! It's the largest youth development program in Texas with more than 550,000 youth involved each year. No matter where you live or what you like to do, Texas 4-H has something that lets you be a better you!

You may think 4-H is only for your friends with animals, but it's so much more! You can do activities like shooting sports, food science, healthy living, robotics, fashion, and photography.

Look for 4-H clubs at your school, an after-school program, a community center, or even on a military base or through the reserves for military families

Texas 4-H is part of the Texas A&M AgriLife Extension Service and the Texas A&M System. Founded in 1908, 4-H is the largest youth development program in Texas, reaching more than 550,000 youth each year

The 4-H Motto and Pledge

"To Make the Best Better!"

I pledge: My HEAD to clearer thinking, My HEART to greater loyalty, My HANDS to larger service and My HEALTH to better living, For my Club, my Community, my Country, and my world.

Participating in 4-H

4-H is a great program because it provides options for young people to participate. From a 4-H club located in your community, a SPIN club that focuses on one particular project area, or participating in 4-H through your classroom at school, 4-H allows youth to learn in many different environments. If you are interested in joining 4-H, contact your County Extension Office and ask for a list of the 4-H clubs in your area. If you are a school teacher/educator and would like to use 4-H curriculum or these project guides in your classroom, contact your Extension Office as well for assistance.

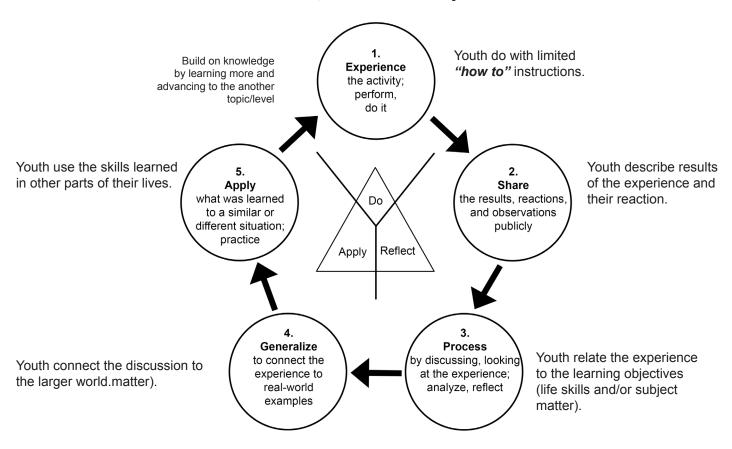


4-H "Learning by Doing" Learning Approach

The Do, Reflect, Apply learning approach allows youth to experience the learning process with minimal guidance from adults. This allows for discovery by youth that may not take place with exact instructions.

EXPLORE THE CONTENT

Introduction of the topic, overview and exploration of content, and review of objectives



4-H SWINE PROJECT Lessons



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Developed by: Travis Franke Zachary Wilcox Michael Clawson Billy Zanolini Courtlyn Ranly

Brent Batchelor Edward Schneider Dottie Goebel Lainey Bourgeois Kelley Ranly



Animal Selection



TIME:

- <u>During Animal Selection:</u> Ranges from 2 hours to 2 + days of traveling and looking at various swine producers.
- Explore Activity: 15 minutes

MATERIALS NEEDED:

During Animal Selection:

 Guidance from a County Extension Agent, an Agricultural Science Teacher, rancher, breeder, 4-H leader or experienced livestock ambassador

Explore Activity:

- PowerPoint presentation with pictures of different barrows or gilts with desirable trait differences or onsite livestock for viewing
- Poker Chips (number depends on the size of contest)
- Two Buckets
- Microphone and Sound System (Depending on Audience Size)
- Rope or Chalk to Create Barriers for Contestants (if using livestock)

OBJECTIVES:

The 4-H member will:

- Learn the selection criteria of a market barrow and breeding gilt.
- Learn about the various breeds of swine.
- Learn when and where to select a market barrow or breeding gilt.
- Be able to select a market barrow or breeding gilt for livestock shows.

EXPLORE THE CONTENT:

Why is animal selection important?

Selecting a market barrow or breeding gilt for a livestock show is a critical beginning step in exhibiting swine. You want to be able to distinguish between an animal with desirable traits and one that is not in line with livestock show standards. Several factors such as age, weight, frame size, and breed type play a role in selecting a market barrow or breeding gilt.

Age

Barrows:

- Barrows intended for major livestock shows in the spring are born in June, July and August, purchased when they are 1 to 2 months old, and are typically market ready by 6 to 7 months of age. It is recommended to begin looking for pigs in September and have the selection process completed by October.
- Barrows intended for major livestock shows in the fall (State Fair) are born in March and April, purchased when they are 1 to 2 months old, and are also market ready by 6 to 7 months of age.
- All market barrows have to be state validated if they will be exhibited at major livestock shows in Texas. Swine validation occurs twice: once in June for fall shows and once in November for those shows occurring in spring. For more information on swine validation, visit http://www.texasffa.org/swinevalidation.

Gilts:

- Gilts intended for major livestock shows must be born between July and September because they are shown in age divided classes. More information about the age divisions can be found in the respective livestock show premium lists.
- In order to be eligible to exhibit a gilt at major livestock shows, the gilt must be registered in the Herdbook of their Association only in the name of the junior owner on or before September 1 (fall shows) and on or before December 1 (spring shows), the year preceding the show.
- In addition, breeding gilts must be state validated for some major livestock shows in Texas. However, not all shows require gilts to be validated. Please reference each show's rules regarding validation for gilts prior to the validation in your county. Gilt validation only occurs once in November for those shows occurring in Spring. For more information on swine validation, visit http://www.texasffa.org/swine-validation.

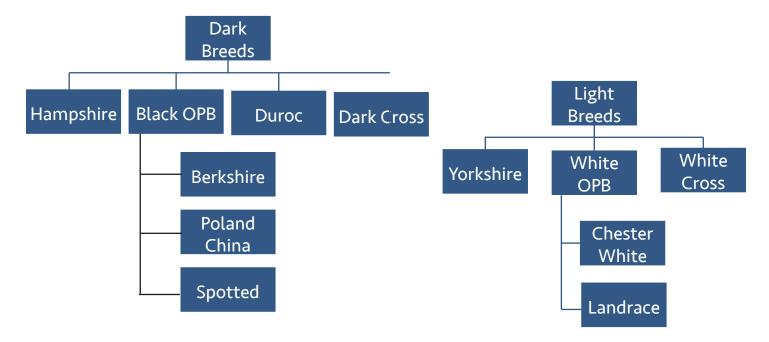


Weight

Baby pigs are weaned from sows and begin eating feed when they weigh approximately 18 to 21 pounds. Barrows typically remain on feed for 120 days and gain approximately .7 pounds per day at the beginning of the feeding period and 1.64 pounds per day towards the end of the feeding period. This yields a weight gain of 160 to 200 pounds, which puts swine at a market weight between 240 to 280 pounds. A range of possibilities exist for weight gain, as some pigs will gain faster than others. Because different shows have different minimum and maximum weight requirements, it is important to check the specific show's rules and guidelines prior to exhibiting.

Breed

There are several breeds of swine to consider when selecting a market barrow or breeding gilt. Always check the respective livestock show premium list for classification rules and divisions. Swine classification is usually conducted by dividing the breeds into a dark and light categories that include black OPB (Other Pure Breeds) and white OPB or dark and light crosses. At some shows, these divisions are further divided into the most common breeds represented in the table below.



Evaluation Criteria

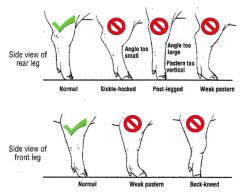
No matter which breed you choose to show, there are several factors to keep in mind when evaluating young livestock. The key selection criteria are based on the physical appearance of the animal, which is genetically based and cannot be altered by feeding. Structure, muscle and balance are the three important areas to consider when selecting your project.

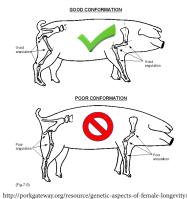
Structure:

- The first area you should evaluate is structure. If a baby pig has poor structure, it will be difficult for the animal to function as a 260 to 280-pound market-ready barrow. Listed below are several structural areas to evaluate and what to look for within each area. If these components are combined correctly, the animal should be able to move freely and stand square and straight on his/her feet and legs.
- Feet: Pig's feet should be pointed straight ahead. Avoid animals that toe in or toe out.
- Legs: Pigs should stand square and straight on their feet and legs. Look for the animal to have long, smooth strides as they walk.



- Hocks: A hock is the joint in the back leg between the ham and hoof. Evaluate the hock for proper flexibility, often referred to as proper set to the hock. Avoid animals that have too much flex (sickle-hocked) or have limited flex (post-legged). If the legs are pointing forward, the hocks should be also. Avoid animals that are bowlegged or cow-hocked.
- Pasterns: Pasterns are the joints that connect the fetlock to the top of the hoof. Ideally, the pasterns make a 45-degree angle with the ground. Avoid weak pasterns like the ones shown in the diagram, as well as pasterns that seem to pop when the animal walks. This indicates that the animal's structure may worsen with time.
- Shoulders: The animal's shoulder should tie in smoothly with its neck and make a 45-degree angle with the body.





http://www.thepigsite.com/pighealth/article/189/leg-weakness-osteochondrosis-ocd/

Muscle:

Muscle and structure go hand-in-hand. You should evaluate the animal's muscle from behind, from the side, and when looking down their top. It is important for baby pigs to have adequate muscle from the beginning so they have a solid foundation of muscle that they can continue to develop as they grow. It is extremely important for a market barrow to have enough expressive muscle because they are evaluated on the ability to produce a carcass that results in the maximum amount of lean meat with a minimum amount of excess fat. Market barrows should have a thick, level, muscular loin, and a long, level, wide ham. The loin should be heavily muscled, indicated by a deep groove down the center and rounded on the edges. The muscling in the ham should be long and deep creating an expressive look in the animal's hindquarter. Expressive muscle refers to muscle that you see on a live animal. Heavily muscled pigs will also be wide in their shoulders and chest floor. Muscle indicators for breeding gilts are similar to a market barrow's, however, excessive muscling on a breeding gilt should be avoided. A breeding gilt should be thick through the center of her ham, wide in her top, and have a base width equal to the width of her top.

Breeding Gilt Female Characteristics:

- In addition to having proper structure and adequate muscling, a breeding gilt should possess ideal female characteristics. When evaluating a breeding gilt for female characteristics you should look at her underline quality, external genitalia, capacity or volume, depth of body, and degree of leanness.
- Underline Quality: Good underlines are evaluated by looking at teat accessibility, number, size and placement. Both rows of teats should point directly downward, not outward, with 6 to 7 teats per side and be about the size of a pencil eraser, avoid teats that are blunt or shaped like a sharp pin. Good underlines are necessary to raise large litters.
- External Genitalia: Gilts should have a well-developed vulva with good size and shape. Beware of gilts with a small vulva or a tipped vulva as this could cause problems with natural mating.
- Capacity or Volume: Gilts with good capacity or volume will be able to perform well in terms of growth and reproduction. Capacity or volume is determined by body width, depth and length. A good indicator of capacity is spring of rib.
- Depth of Body: Gilts should be uniform from fore flank to rear flank. A gilt that lacks adequate depth of body will be shallow in her rear flank, which is not ideal for reproduction.
- Degree of Leanness: Gilts should have a smooth, tight jowl and underline, and an indention at the ham-loin junction that expresses muscling.



Balance:

Balance ties it all together. If you are looking at a market barrow, you want an animal that is level down their top with a correct slope to their shoulders, clean through their front end with a neck that attractively ties into their top, and has good width of skeleton and adequate length of body. If you are looking at a breeding gilt, in addition to having proper structure, adequate degree of muscling and leanness, and good body capacity to support growth, you want her to have ideal female characteristics. Ideally, gilts have good underline quality and a great deal of body capacity with adequate spring of rib. These characteristics contribute to a female's maternal traits, which is extremely important in the show ring and in production. Balance refers to the symmetry of the animal, meaning they should be proportional front to rear and top to bottom.

When and Where

There are several places to look for a market barrow or breeding gilt project. Many breeders will advertise in various livestock show magazines about private treaty sales. Private treaty sales allow buyers to see the livestock, talk to the breeder, and get an overview of the facilities and different aspects of the operation. Instead of private treaty sales, some breeders have live auctions for market barrows or breeding gilts. In addition, there are also online sales. You can spend as much time traveling to farms to look at pigs and talking to breeders as you please. Barrows and gilts should be evaluated and purchased in September and October for spring major livestock shows and in March and April for fall shows. A great technique in selecting swine is to evaluate many animals to train your eye to recognize quality.

DO:

Activity: Speed Judging

Preparation: If you don't have onsite livestock to evaluate, prepare a power point presentation, with pictures comparing barrows to each other or gilts to each other with desirable or undesirable trait differences.

Rules:

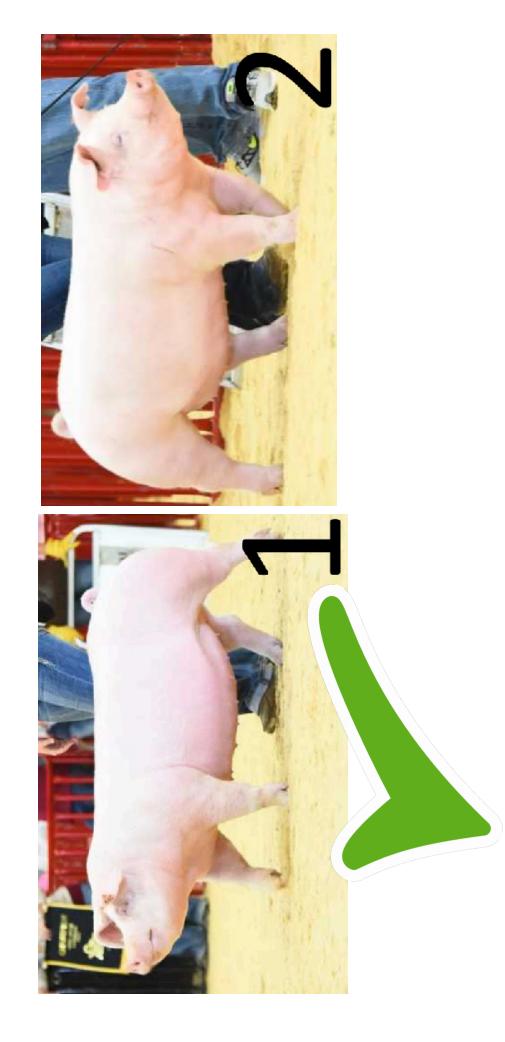
- Two livestock animals (or pictures of two livestock animals) are presented to be evaluated at a time
- Moderator asks question related to two animals
 - Animal #1 is positioned to contestants left and animal #2 on the right respectively
- Participants have two numbered or colored chips (blue representing #1; red representing #2)
- Participants have 20 seconds to answer after the question is presented
- Moderator describes to audience how the question relates to livestock production Encourage parents/adults and eliminated contestants to watch other contestants from the stands
- Participants place the chip or number that corresponds to the wrong answer in the bucket and hang on to the chip they believe answers the question correctly
- Moderator will report the correct answer. Participants holding the correct chip are still in the game. Participants holding the wrong chip are eliminated from the game.
- The last person remaining in the game wins.

Between 1 & 2 which gilt has the most desirable length and depth of body?





ANSWER: Between 1 & 2 which gilt has the most desirable length and depth of body?



Between 1 & 2 which gilt has the more desirable degree of leanness?



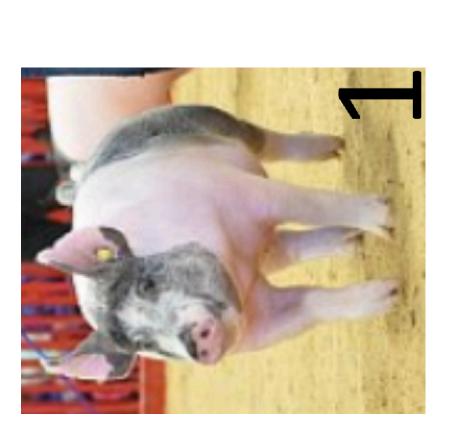


ANSWER: Between 1 & 2 which gilt has the more desirable degree of leanness?



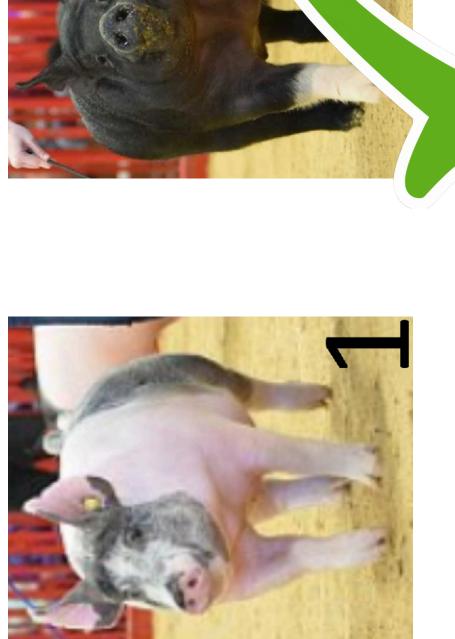


Between 1 & 2, which barrow is wider in its chest floor?



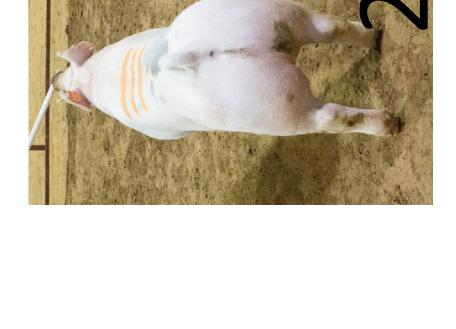


ANSWER: Between 1 & 2, which barrow is wider in its chest floor?



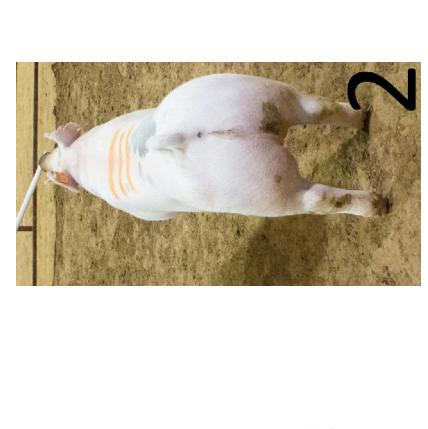


Between 1 & 2 which barrow has more expressive muscling in his ham?





ANSWER: Between 1 & 2 which barrow has more expressive muscling in his ham?





Between 1 & 2 which barrow is more structurally sound?





ANSWER: Between 1 & 2 which barrow is more structurally sound?







REFLECT:

- Although these selection points are important, different people have different opinions when it comes to evaluating livestock animals. Keep this in mind on show day when the judge makes his selections. Research the Livestock Show(s) you plan on attending to find out who will be judging. Research the judge's preferences on what traits he or she usually select for.
- How important is starting out with an animal that has good structure?
- Talk to a County Extension Agent or Agricultural Science Teacher about who is available as a Livestock Mentor related to the swine industry.
- Who is available to offer you guidance during the selection process?

APPLY:

- Aside from competition, where else would the information learned in this activity be relevant?
- How would the information learned through this activity apply to a swine operation?

REFERENCES:

- https://www.purinamills.com/swine-feed/education/detail/weaning-pigs-agree-change-is-hard
- https://www.unce.unr.edu/4H/programs/stem/files/pdf/ShowPigSelectionManualLSU.pdf
- http://counties.agrilife.org/lasalle/files/2011/07/How Raise Show Pigs 7.pdf
- https://extension.tennessee.edu/henderson/Documents/%2713%20Livestock%20Guide%20Module%204%20 Gilts.pdf

Swine Nutrition and Feeding



TIME:

30 minutes

MATERIALS NEEDED:

Explore Activity:

- **Pencils**
- Feed tag for swine ration

OBJECTIVES:

Explore Activity:

The 4-H member will:

- Explain the digestive tract of pigs.
- Describe the feed components of common diets.
- Learn about special dietary requirements of pigs.

EXPLORE THE CONTENT:

Before you complete the animal selection process you should begin to think about a feeding plan to ensure your new pig has adequate nutrition. It is imperative to start with a pig that has good structure, expressive muscle, and potential for sound growth as mentioned in the previous selection section. Good nutrition will unlock the genetic potential of your show pig project, so it is important to put plenty of thought into your feed and nutrition plan. If a pig is fed poor-quality feed or its nutritional requirements are not met, its genetic potential will suffer.

Pigs are monogastric (single stomach) animals with a digestive system similar to the anatomy of a human's. Digestion begins when feed enters the mouth. Feed travels through the esophagus to the stomach where gastric acids and saliva start breaking down the feed. Next, enzymatic digestion begins in the small intestine. The small intestine is made up of three segments: the duodenum, jejunum and the ileum. The main function of the small intestine is to absorb nutrients and further digest feed. Lastly, digested feed travels to the large intestine where fermentation occurs. The majority of water absorption occurs in the large intestine, and anything that makes it past the large intestine is excreted in the pig's feces. It is important and helpful to understand the digestive system when feeding livestock. For example, pigs cannot synthesize essential amino acids and B vitamins like cattle can. The amino acids that cannot be produced internally by the pig must be provided in the diet.

Pigs require six different classes of nutrients at different levels during different stages of growth. Water, carbohydrates, fats, protein (amino acids), minerals and vitamins are all vital nutrients for swine. The most effective and economical way to feed a show pig is to feed different rations as the animal grows. As swine mature, less protein is needed. Nutritionists from The University of Arizona recommend feeding a grower ration until your pig weighs 110 to 125 lbs. This should be followed by a finishing ration, with less protein, until the animal is sold. Before you construct a feeding plan for your pig, be sure to have an ideal finishing weight in mind. Different livestock shows have different requirements on weight. The sooner you're aware of these requirements, the better you will be able to feed your pig accordingly.



DO:

Activity: Reading a Feed Tag

Preparation: The purpose of this activity is to teach students how to read a feed tag. Print a feed tag or make copies of a feed tag from a swine grower feed and swine finisher feed. Prepare questions that pertain to the feed tag. For example, ask:

- What is the main feed ingredient in this feed?
- What is the crude protein level?
- What is the minimum crude fat level of this diet?
- Is ground milo included in the ingredients of this diet?
- How much ration should be fed to a lb barrow/guilt?
- When should this feed be fed to barrows/guilts?
- What are the minimum and maximum levels of this diet?

Rules:

- Ask participants to answer the questions you prepared for the feed tag.
- Discuss the importance of each question and explain the correct answers.

REFLECT:

- Why is it important to be able to read feed tags?
- Where is a feed tag located on a bag of feed?
- Will your pigs need additional supplements not included the feed?
- Should you read a feed tag before you feed an animal, while the animal is eating, after the animal is done eating, or never?
- Can you feed the animal the same feed for its whole life?

APPLY:

How would the information covered in this activity apply to pigs raised for purposes other than showing?

SOURCES:

- http://www.pigprogress.net/Special-Focus/Piglet-Feeding/Pig-nutrition-More-than-just-food/
- https://www.asi.k-state.edu/research-and-extension/swine/research-and-extension/Starter%20Guidelines%20 MF2300.pdf
- https://www.merckvetmanual.com/management-and-nutrition/nutrition-pigs/nutritional-requirements-of-pigs
- https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1055.pdf Nutrient requirements for growing swine table in this source
- http://www.thepigsite.com/pighealth/article/3/digestive-system/ photo of anatomy of digestive system (leave off disease list)

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, platability, and better digestion.

Guaranteed Analysis

	•
Crude Protein	min. 25.0%
Lysine	min. 1.4%
Methionine	
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	
Sodium	min. 0.2%
Sodium	max. 0.4%
Copper	min. 15 ppm
Copper	max. 35 ppm
Selenium	
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 D3 Supplement, Vitamin E Supplement, Choline Chloride, Thiamine Mononitrate, Niacin Supplement, Riboflavin Supplement, Calcium Pantothenate, Pyridoxine Hydrochloride, Vitamin B12 Supplement, Folic Acid, Biotin, Calcium Proprionate (a preservative).

Feeding Instructions

Beef Calves	10% of creep ration
Show cattle	
Brood cows & bulls	
Baby pigs	
Show hogs	1/2 - 1 lb/dav
Gestating sows	1/8 - 1/4 lb/day
Lactating sows	1/2 - 3/4 lb/day
Boars	

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

Sterle, Jodi and Rachel Williams, Pork Quality Assurance Youth Program. Des Moines, IA: National Pork Producers Council, 2000

Complete the following questions for the feed bag label.

- 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?

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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	
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	
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 D3 Supplement, Vitamin E Supplement, Choline Chloride, Thiamine Mononitrate, Niacin Supplement, Riboflavin Supplement, Calcium Pantothenate, Pyridoxine Hydrochloride, Vitamin B12 Supplement, Folic Acid, Biotin, Calcium Proprionate (a preservative).

Feeding Instructions

Beef Calves	10% of creep ration
Show cattle	1-2 lb/day
Brood cows & bulls	
Baby pigs	1/8 - 1/4 lb/day
Show hogs	1/2 - 1 lb/day
Gestating sows	
Lactating sows	1/2 - 3/4 lb/day
Boars	1/4 - 1/2 lb/dav

Manufactured by: Manna Pro Corporation

Net Weight 50 pounds (22.7 kilograms)

Complete the following questions for the feed bag label.

- 1. What is the main ingredient in this feed? **Soybean Meal**
- 2. What is the crude protein level? **25%**
- 3. What is the minimum crude fat level of this diet? 3%
- 4. Is ground milo included in the ingredients of this diet? **No**
- 5. How much supplement should be fed to show cattle? Show hogs? **1 2 lb/day and 1/2 1 lb/day**
- 6. What is one of the four main ingredients found in this supplement? <u>Corn</u>
- 7. What are the minimum and maximum calcium levels of this diet? .7 1.2%



HEALTH AND DISEASE MANAGEMENT



TIME:

Explore Activity:

• 30 minutes

MATERIALS NEEDED:

Explore Activity:

- Sketch Paper
- Pencils
- Rulers

OBJECTIVES:

The 4-H member will:

- Learn the importance of livestock health and well-being.
- Learn the importance of proper management for livestock to sustain growth and production.
- Recognize and be able to treat infections and diseases.
- Learn preventative measures regarding hoof care and external parasites.

EXPLORE THE CONTENT:

Health and disease management for livestock projects should begin when they are born, whether by the breeder or by the exhibitor raising the livestock project. Proper health care and management are crucial to the prevention, control, and treatment of diseases and metabolic disorders, which are commonly associated with nutritional deficiencies. When you make the decision to purchase a swine project you should establish a relationship with your veterinarian and develop a biosecurity plan for your new pigs. The National Pork Board along with the Pork Quality Assurance program defines biosecurity as the set of preventative measures taken to reduce the risk of disease introduction or transmission. With proper preventive measures in place, special attention should be paid to your animal's normal everyday behavior; any shift in this behavior could be an early indication of a problem. Work with your veterinarian to create a scheduled administration of vaccines, deworming and other recommended preventative measures. Perceived small concerns such as ringworms and hoof rot can quickly turn into issues that are detrimental to the animal's health if they are not treated promptly.

Biosecurity:

- At Home:
 - Use clean, farm-specific clothes and boots when working with your animals
 - Isolate incoming (new) pigs
 - Control exposure to birds, wildlife and rodents
- At the Show:
 - Minimize direct contact with other pigs
 - Minimize contact with manure from other animals
 - Refrain from sharing equipment
- Returning Home from a Show:
 - Clean and disinfect trailers and show equipment
 - Isolate incoming pigs from a show

Vaccines: Implementing a vaccination program will better protect livestock animals from diseases caused by infectious viruses and bacteria. When a vaccine is used correctly, it will increase an animal's resistance to disease. Always thoroughly read the vaccine label for proper administration time(s) regarding the pig's age, injection site, route of administration, proper storage temperature, withdrawal period, etc. The only place a vaccine injection should be given is in the neck, either intramuscular (IM; in the muscle) or subcutaneous (SQ; under the skin). It is never



acceptable to give injections in the animal's hip. In addition to the primary injection of any vaccine, often times a second, or booster vaccine, is required for young animals being vaccinated for the first time. A booster vaccine is required for some vaccines to provide optimal protection. Again, consult the vaccine label for directions indicating that a booster is required. In addition, contact a local veterinarian with any questions or concerns.

It is mandatory for exhibitors to follow the safety standards set by Pork Quality Assurance (PQA) regarding swine health and disease control. PQA requires exhibitors to establish a veterinarian client patient relationship (VCPR) for decisions regarding vaccines for disease control and animal welfare. The following vaccines are recommended for swine projects:

- 1. PRRS Vaccine
- PCVAD Vaccine
- 3. Mycoplasma Vaccine
- 4. Swine influenza Vaccine
- 5. Erysipelas Vaccine
- 6. Rhinitis Vaccine
- 7. PPV Vaccine for gilts prior to breeding

Keep in mind that there are plenty of other vaccines available for certain situations and you should always consult your veterinarian regarding these decisions.

Ringworm: Ringworm is a fungal infection on the skin. It is spread from animal to animal by direct contact, or from brushes, combs, and other contaminated surfaces. Ringworm is a zoonotic fungus, meaning it can be transmitted to humans from the animals. There are topical fungicide treatment sprays available at feed stores to apply directly to the ringworm.

Hoof Rot: Hoof rot is an infection caused by bacteria in the ground that enters the hoof through puncture wounds or continuous exposure to wet conditions. A barrow or gilt with hoof rot will show initial signs such as lameness, swelling of the foot, and separation of the skin in-between the hooves. Treatment should begin with cleaning, followed by a topical treatment labeled for swine hoof rot or an iodine spray if it is caught in an early stage. Consult with a veterinarian for recommendations on an antimicrobial therapy treatment program for cases of hoof rot that need special attention when an animal has become severely lame.

DO:

Activity: Banana Injection

Preparation: Mix the food coloring into the water. Give each participant two bananas, a syringe and a needle or a plastic pipette. Discuss the proper way to draw medication into the syringe. Demonstrate for the participants, using the colored water.

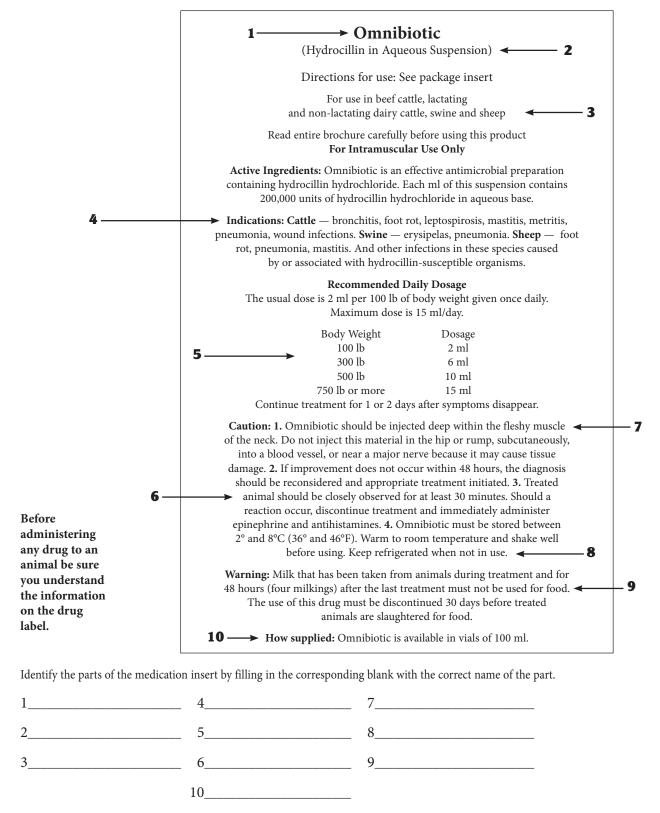
Rules:

- Participants draw colored water into their syringe or plastic pipette.
- Instruct the participants to give a subcutaneous injection into one banana, then give an intramuscular injection into the other banana.
- Cut open each banana and observe how the colored water, a substitute for medicine in this exercise, was dispersed.

Discuss:

Evaluate each banana and determine whether or not the injection was given correctly. Show a medicine bottle label and indicate where it talks about injection type.

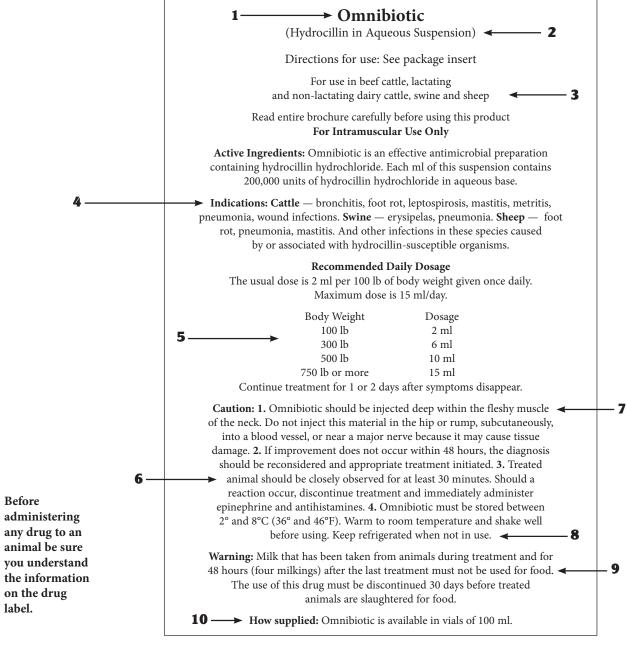
Medication Insert



Sterle, Jodi and Rachel Williams. Pork Quality Assurance Youth Program. Des Moines, IA: National Pork Producers Council, 2000.

Handout 14

Medication Insert



Identify the parts of the medication insert by filling in the corresponding blank with the correct name of the part.

1	Drug Name	4	Approved Use	7_	Route of Administration
2_ A	ctive Ingredient	5	Dosage	8_	Storage Requirements
3_ A	pproved Species	6	Cautions/Warnings	9_	Withdrawal Times
		10	Sizes Available		



REFLECT:

- Why is it important to read medicine labels to determine the proper injection type?
- What is the importance of withdrawal times of medications?

APPLY:

- Why should you always consult with your veterinarian with regard to treatment of livestock projects?
- What vaccinations has your market barrow or breeding gilt project already received and what vaccinations will you need to administer?
- What is the importance of maintaining records on health, treatments and vaccinations?
- How might the information learned in this activity apply to non-show or competition animals?

REFERENCES:

- http://www.aces.edu/pubs/docs/A/ANR-0968/ANR-0968.pdf
- http://www.thejudgingconnection.com/pdfs/Managing Beef for Show.pdf
- http://articles.extension.org/pages/11022/internal-parasites-in-beef-and-dairy-cattle
- http://agrilife.org/qualitycounts/
- http://swineresources.com/necessary-recommended-pig-vaccinations/
- https://www.aasv.org/aasv/BiosecurityforYouthSwineProjects

Facilities and Equipment



TIME:

Explore Activity:

30 minutes

MATERIALS NEEDED:

Explore Activity:

- Brushes, shampoo, show sheen, a water hose, pig stick, hanging feed troughs, etc. (Items you would typically find in a show
- Syringes, oil based skin conditioners, powder, etc. (Items you might find in a show box that could be prohibited at certain shows)
- Livestock show rules to compare. Some prospect shows might have different rules regarding grooming products than major livestock shows. Remember to check rules and guidelines prior to arriving at any livestock show.

OBIECTIVES:

The 4-H member will:

- Learn the basic necessities to provide adequate care for swine projects.
- Learn supplies that are permitted and prohibited at individual livestock shows.

EXPLORE THE CONTENT:

Before you purchase a market barrow or breeding guilt, it is important to think about where you will keep your swine project. These large animals require sufficient space for growth and development. If you have a local school barn facility, look into the space provided for swine projects there. If that is not an option, consider preparing a facility at your home. Ideally, pigs need a covered area with misters during the day (especially in the warm fall months), a comfortable amount of room to be fed and watered, and an area with bedding for overnight. Keep in mind that the extravagancy of your facility is left up to personal preference, exhibitor experience, and your family budget. Several factors such as: electricity, ceiling height and ventilation, flooring and shaving type, wash area, storage, drainage, convenience and accessibility, and finally waste disposal areas should be given consideration when selecting a facility for your swine project.

Electricity: Electricity is important to have for lighting, fans, and heat lamp connections. Make sure the outlets are in a safe location – out of a pig's reach and eliminate the potential hazard of extension cords running across the ground.

Ceiling Height and Ventilation: Pigs with any amount of white skin will need to be protected from the sun. Shade cloth or a covered barn will prevent sunburn and help keep the pigs cool in the warmer months. Ceilings in an open-air barn should ideally be at least ten feet tall. The lower the ceiling height, the warmer the temperature inside the barn due to radiating heat from the ceiling. An open-air barn should be positioned so that prevailing winds can blow in and aid in ventilation. To further ventilate and cool open-air facilities, fans can be added, and positioned so that they're blowing across the circulating air from prevailing winds to force hot air out. Additionally, but certainly optional, an evaporative cooling system (such as a port-a-cool fan) placed so that it can blow with the prevailing winds will help cool the outside air temperature circulating through the barn. Ideally, it should be 90°F or less throughout the barn with constant airflow for pigs to be comfortable and have fresh air. If you're dealing with an insulated barn, ceilings should not be lower than 8 feet tall.

Heat Lamps: If winter temperatures drop below 60F it is recommended to place heat lamps in the pens. To avoid burning your pig, secure heat lamps where they are at least twelve inches and no more than eighteen inches from the top of the pig's back while standing. If temperatures are extremely cold, adding a straw bed to your pig's pen will help keep them warm.



Flooring and Shaving Type: Avoid slick surfaces in the walkways or aisles of your barn. If the barn floor surface is slick concrete, consider putting rubber mats down to provide a surface with more traction for livestock to walk on. Covered pens should be filled with sand or pine shavings. This helps create a comfortable area for livestock that is also easier to keep clean.

Wash Area: It is helpful to have a concrete area to bathe your pigs. This prevents the ground from getting muddy and having the pigs in the mud after they have been cleaned.

Storage: Consider having adequate dry storage space to put feed, equipment and supplies. Keeping feed in a separate secure area closed off from the rest of the barn is helpful for many reasons, such as keeping rodents away from the feed, preventing mold growth, and maintaining equipment quality. Once a feedbag is opened, roll the top of the bag down to close it and protect it from moisture in the air.

Drainage: It is recommended to position your barn on a slope to aid in proper drainage.

Proper drainage is important so that water (whether it be from washing the pigs, cleaning the floors or mats, wetting down shavings, filling water troughs, or rain) does not build up in and around the barn. Standing water in and around the barn provides a favorable environment for flies, mosquitoes and bacteria growth, all of which can be harmful to you and the livestock.

Convenience and Accessibility: From a convenience and accessibility standpoint, think about backing a trailer up to the barn for loading and unloading. Also, consider making an all-weather road to your barn to prevent trucks and trailers from getting stuck if significant weather arises around a time when the animals need to be transported.

Waste Disposal: Pens should be cleaned at least twice daily to decrease the amount of flies, disease and odor. In turn, this optimizes the pig's performance. Have a place to make a compost pile away from the livestock, but keep neighbors in mind. Manure is also a fly attractant, which is why it is important to have waste disposal away from the barn. Flytraps are commonly used around the waste disposal area to help decrease fly numbers.

Fencing (Runs): Some pig runs have three components to them: a hut with pine shavings, a covered concrete area where the pig is fed and watered, and an outside covered portion in which pigs can move freely throughout the day. Panel fence is a great option for these runs and prevents swine from scratching their skin and rooting under the fence.

Feed Troughs: Self feeder troughs should be tightly secured to the fence in the pig's run. Pigs are known to root and if a feeder isn't properly secured to the fence it will result in being knocked over (which could be a hazard for your pig) with spilled feed. Hanging troughs can also be used to hand feed pigs and are easy to clip to the fence at feeding time. Feed troughs should be cleaned out regularly.

Water: The most common systems used to water pigs are water nipples and water bowls on a float system. It is important to make sure that you mount the water dispenser at an appropriate height so that pigs have easy access to the water. In addition, the water dispenser should be kept in the shade to ensure that pigs have fresh cool water all day long. It does not matter which dispenser you choose as long as you maintain a fresh, clean water source.

DO:

Activity:

Preparation: Gather two sets of various supplies for each team that might be found in a show box and place them out on a table or the ground for participants to see. Print off different sets livestock show rules regarding what type of grooming supplies are allowed or prohibited.



Rules:

- Divide the participants into two groups.
- Give each group the same set of livestock show rules.
- Allow the team three minutes to review and understand the rules of the show.
- At the end of the three minutes, have the teams line up on the opposite end of the room from where the supplies are laid out.
- Set a timer for five to fifteen minutes depending on team size and how many supplies are available.
- Teams will race one participant at a time down to the supplies on the table and select one item that belongs in the show box. Run back to their team and the next team member will go.
- At the end of the allotted time, the team with the most amount of correct items in their show box wins.
- Repeat the activity with rules from a livestock show that are different from the first set of rules used. This will allow participants to recognize that different shows have difference expectations.

REFLECT:

- Are there any supplies in either show box that do not belong according to the livestock show rules?
- Is there potential for exhibitors to be disqualified from a show for using a product at one show versus using it at another show?
- How important is it to read the livestock show rules before you pack to go for the show?
- If the show box is packed from the previous show and items are present that are not allowed at the next show, is it risky to take them along anyway?

APPLY:

- How will you use this information in preparing for a livestock show in the future?
- If there are any supplies or grooming products that you are unsure about, who can you ask to find out if you need to leave the supplies out?

SOURCES:

- https://www.thejudgingconnection.com/pdfs/752 Show Pig Care.pdf
- http://counties.agrilife.org/grimes/files/2011/03/pig show.pdf

EVERYDAY CARE TECHNIQUES



TIME:

Explore Activity:

30 minutes

MATERIALS NEEDED:

Explore Activity:

- Pencils for each participant
- Paper for each participant
- Chalk or Markers
- Blackboard or Dry Erase Board

OBIECTIVES:

The 4-H member will:

- Learn the proper handling techniques for
- Learn the basic techniques of grooming show hogs.
- Learn why exercise is important for pigs.

EXPLORE THE CONTENT:

It is important for market and breeding swine projects to be handled and groomed on a daily basis. The earlier handling begins for the animal, the more likely it is that the barrow or gilt will have a manageable temperament. It is important for the animal and exhibitor to interact every day. Handling begins initially by establishing a trusting relationship with your pig. This can be done by sitting in the pen with your swine project and letting them get used to you. You can also slowly introduce a bathing and grooming routine. For exercise, you should practice walking them, similar to the way you will drive them in the show ring. This allows the barrow or gilt to build that trusting relationship with the exhibitor, as well as improve the animal's appearance, temperament, and cooperation.

Washing: Washing is an important daily routine for a show pig. First, rinse the animal with water, being mindful not to get any water in their ears. Start behind the head and rinse down the animal's back, down the body, and then along the underline to clean off mud, manure and dirt. After rising, apply a gentle soap, such as shampoo or non-concentrated dish soap. Lather the soap into the pig's hide using your hands or a soft scrubber for a thorough cleaning. Thoroughly rinse out the soap and then apply a conditioner to the pig's hide. Conditioning will benefit the pig's skin and prevent it from being dry and flaky. Apply the gentle cleansing soap only two or three times per week, depending on how dirty the animal is. Using shampoo or dish soap every day will dry the pig's skin. However, you may condition the pig on a daily basis. Conditioners like Mane and Tail are safe and gentle for all hair types and help to repair the hair and scalp from the damaging effects of the environment. Washing is beneficial because it keeps the pigs clean and cool in the warmer months. Additionally, washing show pigs helps build a relationship between the animal and the exhibitor, and prepares the animal for show season.

Brushing: Brushing should be done following each wash. Some people prefer to apply a coat of show sheen to the animal's hair and then brush it into the hair and skin. Brush the animal's top, body, legs and underline.

Drying: Drying your pig off after you bathe them helps to them to stay cleaner longer and prevents them from getting sick during the winter. Simply use a towel or shammy to soak up the extra water that is left on the pig after you bathe and brush them.



<u>Walking:</u> Regular walking serves as exercise for pigs and will benefit the animal's structure. Consistent walking can also aid in muscle development. Practice driving your pig with their head up and turning them so they are familiar with your commands on show day. You should walk your pig in an arena using a tool, commonly referred to as a pig stick, to gently direct them in the way you want them to go. You can gently tap your pig on their sides to keep them moving, and on the left side of their jowl to turn them right, or on the right side of their jowl to turn them left. Gently tapping underneath the pig's chin will make them keep their head up. Make sure to be consistent with your pig so they learn what you expect from them. You should never use your pig stick in a violent manner or tap your pig with it harder than you would tap yourself with it. This could leave visible marks on a light colored pig's skin and is considered an abusive behavior.

DO:

Activity: What Motivates Exhibitors to Have Livestock Projects?

Preparation: The purpose of this activity is to help exhibitors think about the reasons they chose to become involved in 4-H or FFA as a livestock exhibitor. Give each participant a sheet of paper and a pencil.

Rules:

- Ask participants to think about their motivation for having a livestock project and write down their thoughts on paper.
- Explain that there are usually two main reasons for people to do things as extracurricular activities:
 - To have fun
 - To feel success and accomplishment
- Write these two categories on the board and ask the participants to share the motivations they wrote down. Write each one under one of the categories.

REFLECT:

- Why is caring for and exhibiting livestock about more than winning and losing?
- What personal skills could you grow throughout the year through your swine projects?

APPLY:

- Discuss: Being responsible for an animal will help youth exhibitors mature, develop a strong work ethic and increase their knowledge of breeding and/or market swine.
- How will exhibitors use the character traits developed through being a livestock exhibitor in college, in the work place, and in other activities?

SOURCES:

- https://manentail.com/products/the-original-mane-n-tail-shampoo/
- http://surechamp.com/blog/2016/07/25/show-pig-skin-care-light-vs-dark/
- https://www.thejudgingconnection.com/pdfs/Fitting and Showing Show Pigs.pdf

SHOWMANSHIP AND CLIPPING



TIME:

Eplore Activity:

One hour

MATERIALS NEEDED:

Explore Activity:

- 2 pairs of jeans with holes
- 2 pair of jeans acceptable to show in
- 2 t-shirts
- 2 button down shirts
- 2 pair of old tennis shoes
- 2 pair of boots
- 2 baseball caps
- Stopwatch

OBJECTIVES:

The 4-H member will:

- Learn showmanship etiquette
- Learn how to dress properly for show day
- Learn the basics of preparing their swine project for show day

EXPLORE THE CONTENT:

Showmanship: Swine showmanship is based on a trifecta of how well an exhibitor presents his/her market barrow or breeding gilt, exhibitor etiquette, and ring presence. Begin preparing for showmanship as soon as possible. The best showmen practice with their animals and plan every step that needs to be taken to succeed. For additional practice outside of the home, look into a local showmanship clinic.

- Animal Presentation: A good showman will effectively present their animal to the judge in a way that maximizes its good characteristics and minimizes its weaknesses. Consider carrying a small brush in your back pocket to use if necessary. When driving pigs in the ring, the exhibitor should keep their hog between them and the judge. When you change directions in the ring move the driving tool to the other hand and stay on the side of your hog opposite the judge. If your pig is selected to be penned, do not stop showing your pig. Drive it to the holding pen and make sure that your pig does not lay down. Take this time to lightly mist your hog with water and brush off any dirt or manure.
- 2. Exhibitor Etiquette: Show ring etiquette is about being courteous to other exhibitors, ring stewards and the judge.
 - Leave adequate space in between each animal for the judge to walk and view animals.
 - When the judge asks a question, answer with confidence and respect. The judge might ask for the animal's weight, birth date, how it was bred, etc. Be prepared for these questions before entering the ring so the judge gets an honest answer.
 - Do not block the view of another animal from the
 - Shake the judge's hand at the end of the class regardless of placing.
- 3. Ring Presence: Exhibitors need to dress neatly and professionally in the show ring. No caps, hats, t-shirts, shorts or ripped jeans are recommended in the show ring. Appropriate attire for showmen include: button-down collared shirts, nice jeans, a belt and boots. Exhibitors should show their animal with confidence, be alert, and know where the judge is at all times.

Clipping: Clipping a market barrow or breeding gilt for a livestock show can be one of the most challenging aspects of exhibiting these projects. It is important to put effort into the animal's appearance everyday to unlock the animal's full potential on show day. Do not expect to put in minimal effort to skin care and



clipping, and in turn, get the best results. Other exhibitors may spend hours grooming their animal before the show and it may benefit their placing outcome. Grooming entails washing, drying, brushing and conditioning the animal's skin and hair. Clipping the animal's hair a few days prior to the show creates a youthful and fresh appearance. Each livestock show in Texas has guidelines regarding the permissible hair length for pigs being exhibited at their show. It is important to read each livestock show's rules and regulations before clipping an animal. County Extension Agents and Agricultural Science Teachers are great resources to utilize if you would like helping clipping your swine project.

DO:

Activity: What Not to Wear

Preparation: Place articles of clothing out on a table with the nice clothes scattered alongside the casual clothes. Divide participants into two teams.

Rules:

- Have each team designate a person to be the model for an appropriate show day outfit. Each model will stand up on either side of the table with the clothes.
- Fach team should have their backs to the table with the clothes.
- One team member at a time will run to the table and pick out an appropriate piece of clothing for the model to put on over his clothes.
- The team that dresses their model in the most appropriate clothing in the shortest amount of time wins.

REFLECT:

- Is it appropriate to wear a t-shirt, baseball cap and tennis shoes in the show ring?
- Why is dressing professional an important part of showmanship?
- How can dressing appropriately at livestock shows prepare you for dressing professionally in a work place?
- Can conducting yourself professionally while at a livestock show positively effect connections with industry experts and others?

APPLY:

- What will you wear to show your animal?
- Is it appropriate to wear a t-shirt, baseball cap and tennis shoes in the show ring?
- Why is dressing professional an important part of showmanship?
- Can dressing and acting professionally at a livestock show positively effect connections with experts and mentors?

REFERENCES:

- https://www.thejudgingconnection.com/pdfs/Swine Fitting and Hair Clipping.pdf
- http://www.thepigsite.com/articles/4285/swine-showmanship/





MARKING INSTRUCTIONS

4-H Explore **Project Book Evaluation - Rabbits**

1. Please read the statement in the left column of the table below. For each item listed below, mark the number in the left column for your level of understandg **BEFORE** the program; then mark the number in the right column for your level of understanding <u>AFTER</u> the program.

LEVEL OF UNDERSTANDING: 1 = Poor, 2 = Average, 3 = Good, 4 = Excellent		BEFORE				AFTER			
As a result of participating in the Swine Project lessons and activities		2	3	4	1	2	3	4	
I understand the skills needed for the swine project.	0	0	0	0	0	0	0	0	
I understand the difference between showing breeding and market swine.	0	0	0	0	0	0	0	0	
I understand the proper space that is needed for a swine project.	0	0	0	0	0	0	0	0	
I understand proper show etiquette.	0	0	0	0	0	0	0	0	
I understand the steps needed when preparing for a new swine project.	0	0	0	0	0	0	0	0	

2. For each statement below, fill in the bubble that best describes you.

INTENTIONS TO ADOPT: As a result of participating in the Swine Project lessons and activities	Yes	No	Unsure
I can decide if the swine projects is right for me.	0	0	0
I will use what I have learned to decide to raise market or breeding swine.	0	0	0
I plan to provide the proper space needed for my swine project.	0	0	0
I plan to have all of my supplies ready for a show.	0	0	0
I can make a plan for the next show season.	0	0	0

3. For each statement below, fill in the bubble that best describes your level of agreement with the following statements.

BEHAVIOR CHANGES: As a result of participating in the Swine Project lessons and activities		Disagree	Agree	Strongly Agree
I am more comfortable working in a team.	0	0	0	0
I am more willing to listen to others.	0	0	0	0
I am more comfortable speaking with others.	0	0	0	0
I am more confident in my abilities as a leader.	0	0	0	0
I am more comfortable in preparing for a swine show.	0	0	0	0
I am more confident in my abilities to properly care for a swine project.	0	0	0	0



	CORRECT: INCORRECT:				
What is the most significant thing you learned in the Swine project?					
Please tell us about your	self.				
Gender: O Female O Male					
I consider myself to be: O African American	O White				
O Asian American O Native American	O Other				
I consider myself to be: O Hispanic O Non-Hisp	panic				
Grade: O 3rd O 5th O 7th O 9th O 11th					
O 4th O 6th O 8th O 10th O 12th					
Most of the time, you live					
O Farm or ranch O Town less than 10,000 O City between 10,000 - 50,000 O Suburb of city between 50,000 O Central city/urban center with more than 50,000					
Please provide any additional cor	mments below.				

3.

MARKING INSTRUCTIONS