

Swine Curriculum



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This curriculum and accompanying products will help participants learn information regarding swine agriculture.

Curriculum Structure

The *Swine* curriculum is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Swine Breeds	60 minutes
Two	Intro to Feeding and Management	60 minutes
Three	Swine Disease and Parasites	60 minutes
Four	Reproduction	60 minutes
Five	Body Systems	60 minutes
Six	Selection and Judging	60 minutes
Seven	Marketing/Careers/Training	60 minutes
	Total	7 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table which lists lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which contains some of the sections described below. Most lessons are designed to be completed within an hour.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a demonstration, or a review of previous lesson information. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Swine Breeds

Lesson Overview

Participants will learn the physical characteristics of different swine breeds along with other traits that separate each breed.

Lesson Objectives

After completing this lesson, participants will be able to:

- List the top swine breeds in the United States
- List traits for each breed that make them valuable
- Define terms associated with swine

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Intro to Swine Breeds</i> worksheet	1. Print/photocopy <i>Intro to Swine Breeds</i> (one per participant)	10 minutes
LEARN	• <i>Swine Breeds</i> slide presentation • <i>Swine Breeds and Traits</i> worksheet • <i>Swine Breeds and Traits</i> – Answer Key	1. Print/photocopy <i>Swine Breeds and Traits</i> (one per participant) 2. Prepare <i>Swine Breeds</i> slide presentation for viewing	40 minutes
REVIEW	• Swine Breeds ID Flashcards • <i>Swine Breeds Quiz</i> • <i>Swine Breeds Quiz</i> – Answer Key	1. Print/photocopy Swine Breeds ID cards 2. Print/photocopy <i>Swine Breeds and Traits Quiz</i> (one per participant)	10 minutes

Lesson One – Swine Breeds

FOCUS: Intro to Swine Breeds

10 minutes

Purpose:

Participants will be introduced to the terms used in the swine industry.

Materials:

- *Intro to Swine Breeds* worksheet
- *Intro to Swine Breeds – Answer Key*

Facilitation Steps:

1. Pass out the worksheet prior to or at the start of class. And instruct participants on how to fill it out.
2. Give participants five minutes to complete the worksheet.
3. After this time, instruct participants to exchange papers.
4. Go over the answers with the class.
5. Collect the worksheets.

Name: _____ Class: _____

Intro to Swine Breeds

Directions: Using the answers at the bottom of the page, match them to the terms numbered by placing the correct letter in the blank.

1. Baconer _____
2. Barrow _____
3. Dam _____
4. Feeder _____
5. Gilt _____
6. Grower _____
7. Hog _____
8. Pig _____
9. Poker _____
10. Runt _____
11. Sire _____
12. Stag _____
13. Swine _____
14. Drift _____
15. Drove _____
16. Team or Passel _____

- A. A group of hogs
- B. A herd or group of pigs
- C. A young swine
- D. A term for pigs or hogs
- E. A group of young pigs
- F. A male pig that was castrated after reaching sexual maturity
- G. A grower pig weighing between 80 and 150 pounds
- H. The smallest pig in a litter
- I. The male parent
- J. The female parent
- K. A piglet between 40 and 80 pounds that is sold to be finished
- L. A pig that is intended to be raised/sold for slaughter
- M. A young female that has never given birth
- N. A male pig that was castrated before reaching sexual maturity
- O. A finished pig ready for market that weights between 150 to 300 pounds
- P. Swine weighing over 120 pounds

Intro to Swine Breeds – Answer Key

Directions: Using the answers at the bottom of the page, match them to the terms numbered by place the correct letter in the blank.

1	Baconer	O
2	Barrow	N
3	Dam	J
4	Feeder	K
5	Gilt	M
6	Grower	L
7	Hog	P
8	Pig	C
9	Poker	G
10	Runt	H
11	Sire	I
12	Stag	F
13	Swine	D
14	Drift	E
15	Drove	B
16	Team or Passel	A

- A. A group of hogs
- B. A herd or group of pigs
- C. A young swine
- D. A term for pigs or hogs
- E. A group of young pigs
- F. A male pig that was castrated after reaching sexual maturity
- G. A grower pig weighing between 80 and 150 pounds
- H. The smallest pig in a litter
- I. The male parent
- J. The female parent
- K. A piglet that is between 40 and 80 pounds that is sold to be finished
- L. A pig that is intended to be raised/sold for slaughter
- M. A young female that has never given birth
- N. A male pig that was castrated before reaching sexual maturity
- O. A finished pig ready for market that weights between 150 to 300 pounds
- P. Swine weighing over 120 pounds

Lesson One – Swine Breeds

LEARN: Swine Breeds and Traits

40 minutes

Purpose:

Participants will be introduced to the major swine breeds in the United States along with their traits.

Materials:

- *Swine Breeds and Traits* slide presentation
- *Swine Breeds and Traits* worksheet

Facilitation Steps:

1. Prepare the *Swine Breeds and Traits* slide presentation.
2. Pass out the *Swine Breeds and Traits* worksheet prior to or at the beginning of class to participants.
3. Instruct participants on how to fill out the worksheet.
4. Present the *Swine Breeds* slide presentation.

Slide 1: Title slide

Slide 2: Why These Hogs?

- Top breeds found in the United States
- Valued for:
 - Being good mothers
 - Docile in nature
 - Marbling of meat
 - Good converters of feed to meat

Slide 3: Berkshire

Slides 4-5: Berkshire Characteristics

- Black with white on the face, legs, and tail
- Erect ears
- Medium to large breed
- Boars and sows average 600 pounds
- Smart, well suited for extensive pig farming system
- Known for good quality meat
- Grow relatively quickly

Slide 6: Chester White

Slides 7-8: Chester White Characteristics

- White with small, partially drooping ears
- Medium to large breed
- Boars average 550 to 800 pounds
- Sows average 500 to 650 pounds
- Known to be good mothers
- Very efficient at converting feed to meat
- Known for good quality meat
- Sunburn in the summer
- Do not sweat so they cover themselves with mud to keep cool and protect their skin
- Produces saliva that contains pheromones, which signals to other pigs their sexual desire

Slide 9: Duroc

Slides 10-11: Duroc Characteristics

- Red with partially drooping ears
- Muscular
- Medium to large breed
- Boars average 800 pounds
- Sows average 700 pounds
- Excellent for producing a heavy carcass
- Meat from this swine is dark red
- Reddish meat of this pig has a higher pH level compared to white or pink swine meat
- Meat is known for its marbling
- Thrives in the Corn Belt of the United States
- Sow named T.J. Tobasco was the first Duroc pig to have its genome sequenced

Slide 12: Hampshire

Slides 13-14: Hampshire Characteristics

- Black with white belt
- Muscular
- Classified as a large breed but due to the early slaughter size of 125 to 250 pounds, it is labeled a medium breed
- Boars average 650 pounds
- Sows average 550 pounds
- Can live up to 12 years
- Produces lean meat with good carcass quality
- Known as “The Mark of a Meat Hog”

Swine

- Skin is thin so it is good for pork rinds
- Ranks number four in pig breeds in the United States
- Known to have a unique ability to read humans and provide comfort like a dog

Slide 15: Hereford

Slides 16-17: Hereford Characteristics

- Red-brown with white face and medium-size, drooping ears
- Resemble Hereford cattle
- Medium to large breed
- Boars average 800 pounds
- Sows average 600 pounds
- Produces lean meat
- Grows and matures fast
- Found throughout the United States but especially in Indiana, Iowa, and Illinois
- Docile
- Sows are excellent mothers and produce large litters

Slide 18: American Landrace

Slides 19-21: American Landrace Characteristics

- White with large, drooping ears
- Very long bodied
- Cannot have any spots, which is undesirable for this breed
- Medium to large breed
- Boars average 500 to 700 pounds
- Sows average 450 to 700 pounds
- One of the top five breeds in the United States
- Has 16 or 17 pairs of ribs
- Produces lots of bacon, large hams that are trim (not a lot of fat), and quality meat
- Feet or “trotters” are used for human consumption in the form of pig’s feet or knuckles
- Sows are prolific reproducers, give birth to heavy piglets, and are heavy milk producers
- Also known as the Sowherd of the United States

Slide 22: Pietrain

Slides 23-27: Pietrain Characteristics

- Black and white spotted
- Black spots have an outline created by the mix of white hair with black

- Can be described as looking like a shadow
- Ears are erect
- Medium breed
- Boars average 530 to 570 pounds
- Sows average 485 to 530 pounds
- Known for their lean meat to fat ratio, which is 66.7% lean to 24.5% fat
- While known for lean meat, there meat is not desired due to 2 copies of the halothane gene, which causes Porcine Stress Syndrome
- Due to the lean body and heavy muscling, this breed is used for show or breeding
- Sires are imported to the United States for genetics if they only have one copy of the halothane gene, but no trace of this gene is preferred
- Goal of the breeding program is to create crosses of swine that have the low fat and heavy muscling of this breed with other traits that the farmer, butcher, and consumer want
- Calm and friendly
- Sows produce large litters
- Poor milk producers
- Poor mothers
- Farmers need to help raise the piglets

Slide 28: Poland China

Slides 29-30: Poland China Characteristics

- Black with 6 white patches on the face, feet, or switch
- Ears are partially droopy
- Medium to large breed
- Boars average 550 to 800 pounds
- Sows average 500 to 650 pounds
- Number one breed in the United States for pork production
- Easily converts food to quality meat
- Makes great bacon, ham, and pork chops
- Sows can give birth to 17 piglets per litter on average
- Sows can get so big and flat sided that they end up crushing piglets

Slide 31: Spotted Swine

Slides 32-34: Spotted Swine Characteristics

- Black and white spotted
- Partially drooped ears

Swine

- Ideal mix of color is 50% black and 50% white
- Medium to large breed
- Boars and sows average 500 to 600 pounds
- Produces lean meat
- Requires less feed to gain weight
- Was grown for lard production
- Known to pass on their ease in weight gain, feed efficiency, and meat qualities to offspring
- Sows are good reproducers and mothers
- Litter size is normally 12 or more piglets

Slide 35: Tamworth

Slides 36-39: Tamworth Characteristics

- Light to dark red
- Elongated body with narrow sides
- Erect ears
- Long neck and legs
- Medium to large breed
- Boars average 551 to 815 pounds
- Sows average 440 to 661 pounds
- Referred to as a “bacon breed” due to producing little back fat
- Thrives on low-energy foods
- Gains weight slowly
- Wonderful foragers
- Can be raised with cattle
- Sows are good mothers and highly prolific
- Sows produce and care for large litters
- Spots are not desirable in this breed
- Produce firm-textured, marbled, lean meat
- Does not do well confined
- Labeled “threatened” in the United States with fewer than 300 registered breeding females remaining
- Known to have a good skeletal system and excellent foot structure

Slide 40: American Yorkshire

Slides 41-43: American Yorkshire Characteristics

- White to pink color with erect ears
- Long bodied
- Medium-size breed
- Boars average 550 to 750 pounds
- Sows average 450 to 650 pounds
- Another “bacon breed” due to less fat produced on the back
- Produces a large amount of lean meat
- Fine boned but also muscular
- Sows are very fertile
- Large litters are produced and cared for by the sow easily
- Live between 6 and 10 years
- It is recorded that a four-year-old boar measured 9 feet 10 inches long, 8 feet around the body and weighed 1,334 pounds in *Two Hundred Years of British Farm Livestock* (Stationery Office, 1996)
- Today, this breed is normally slaughtered at one or two years old

Swine Breeds and Traits

Directions: As you watch the Powerpoint, fill in the information for each swine breed.

1. Name:

Appearance:

Size:

Weight:

Other Characteristics:

2. Name:

Appearance:

Size:

Weight:

Other Characteristics:

3. Name:

Appearance:

Size:

Weight:

Other Characteristics:

4. Name:

Appearance:

Size:

Weight:

Other Characteristics:

5. Name:

Appearance:

Size:

Weight:

Other Characteristics:

Swine

6. Name:

Appearance:

Size:

Weight:

Other Characteristics:

7. Name:

Appearance:

Size:

Weight:

Other Characteristics:

8. Name:

Appearance:

Size:

Weight:

Other Characteristics:

9. Name:

Appearance:

Size:

Weight:

Other Characteristics:

10. Name:

Appearance:

Size:

Weight:

Other Characteristics:

11. Name:

Appearance:

Size:

Weight:

Other Characteristics:

Swine Breeds and Traits – Answer Key

Directions: As you watch the PowerPoint, fill in the information for each swine breed.

1. Name: **Berkshire**

Appearance: **Black with white on the face, legs, and tail with erect ears**

Size: **Medium to large**

Weight: **Boars 600 pounds, sows 600 pounds**

Other Characteristics: **Smart and well suited for extensive pig farming system, known for good quality meat, and grow relatively quickly**

2. Name: **Chester White**

Appearance: **White with small, partially drooping ears**

Size: **Medium to large**

Weight: **Boars 550 to 800 pounds, sows 500 to 650 pounds**

Other Characteristics: **Known to be good mothers, very efficient at converting feed to meat, known for good quality of meat, sunburn in the summer, do not sweat so they cover themselves with mud to keep cool and to protect their skin, produce saliva that contains pheromones to signals to other pigs their sexual desire**

3. Name: **Duroc**

Appearance: **Red with partially drooping ears and muscular**

Size: **Medium to large**

Weight: **Boars 800 pounds, sows 700 pounds**

Other Characteristics: **Excellent for producing a heavy carcass, meat from this swine is dark red, reddish meat of this pig has a higher pH level compared to white or pink swine meat, the meat is known for its marbling, thrives in the Corn Belt of the United States, and a sow named T. J. Tabasco was the first Duroc pig to have its genome sequenced**

Swine

4. Name: Hampshire

Appearance: Black with white belt, muscular

Size: Are actually classified as a large breed but due to the early slaughter size of 125 to 250 pounds, it is labeled a medium breed

Weight: Boars 650 pounds, sows 550 pounds

Other Characteristics: Can live up to 12 years, produces lean meat with good carcass quality, known as "The Mark of a Meat Hog," skin is thin so it is good for pork rinds, ranks number four in pig breeds in the United States, and is known to have a unique ability to read humans and provide comfort like a dog

5. Name: Hereford

Appearance: Red-brown with white face, medium drooping ears, and resemble Hereford cattle

Size: Medium to large

Weight: Boars 800 pounds, sows 600 pounds

Other Characteristics: Produces lean meat; grows and matures fast; found throughout the United States but especially in Indiana, Iowa, and Illinois; docile; sows are excellent mothers and produce large litters

6. Name: American Landrace

Appearance: White with large, drooping ears; very long bodied; cannot have any spots, which is undesirable for this breed

Size: Medium to large

Weight: Boars 500 to 700 pounds, sows 450 to 700 pounds

Other Characteristics: One of the top five breeds in the United States; has 16 or 17 pairs of ribs; produces lots of bacon, large hams that are trim (not a lot of fat), and quality meat; the feet or "trotters" of this breed are used for human consumption in the form of pig's feet or knuckles; sows are prolific reproducers, giving birth to heavy piglets, and are heavy milk producers; this breed is also known as the Sowherd of the United States

7. Name: **Pietrain**

Appearance: Black and white spotted, black spots have an outline created by the mix of white hair with the black, can be described as looking like a shadow, ears are erect

Size: **Medium**

Weight: **Boars 530 to 570 pounds, sows 485 to 530 pounds**

Other Characteristics: Known for their lean meat to fat ratio, which is 66.7% lean to 24.5% fat; while known for lean meat, their meat is not desired due to two copies of the halothane gene, which causes Porcine Stress Syndrome; due to the lean body and heavy muscling, this breed is used for show or breeding; sires are imported to the United States for genetics as long as they only have one copy of the halothane gene but no trace of this gene is preferred; the goal of the breeding program is to create crosses of swine that have the low fat, and heavy muscling trait of this breed combined with other characteristics that the farmer, butcher, and consumer want; calm and friendly; sows produce large litters; poor milk producers; poor mothers; farmers need to help raise the piglets

8. Name: **Poland China**

Appearance: Black with 6 white patches on the face, feet, or switch; ears are partially droopy

Size: **Medium to large**

Weight: **Boars 550 to 800 pounds, sows 500 to 650 pounds**

Other Characteristics: Number one breed in the United States for pork production; easily converts food to quality meat; this breed makes great bacon, ham, and pork chops; sows can give birth to 17 piglets per litter on average; sows are can get so big and flat sided that they end up crushing piglets

9. Name: **Spotted Swine**

Appearance: Black and white spotted, partially drooped ears, ideal mix of color is 50% black and 50% white

Size: **Medium to large**

Weight: **Boars 500 to 600 pounds, sows 500 to 600 pounds**

Other Characteristics: Produces lean meat; requires less feed to gain weight; was grown for lard production; are known to pass on their ease in weight gain, feed efficiency, and meat qualities to offspring; sows are good reproducers and mothers; litter size is normally 12 or more piglets

10. Name: Tamworth

Appearance: Light to dark red, elongated body with narrow sides, erect ears, long neck and legs

Size: Medium to large

Weight: Boars 551 to 815 pounds, sows 440 to 661 pounds

Other Characteristics: Referred to as a “bacon breed” due to producing little back fat; this breed thrives on low-energy foods, gain weight slowly; wonderful foragers; can be raised with cattle; sows are good mothers and highly prolific; sows produce and care for large litters; spots are not desirable in this breed; produces firm-textured, marbled, lean meat; does not do well confined; labeled “threatened” in the United States with fewer than 300 registered breeding females remaining; is known to have a good skeletal system and excellent foot structure

11. Name: American Yorkshire

Appearance: White to pink color, erect ears, long bodied

Size: Medium

Weight: Boars 550 to 750 pounds, sows 450 to 650 pounds

Other Characteristics: Another “bacon breed” due to less fat produced on the back; produces a large amount of lean meat; this breed is fine boned but also muscular; sows are very fertile; large litters are produced and cared for by the sow easily; live between 6 to 10 years; it is recorded that a four-year-old boar measured 9 feet 10 inches long, 8 feet around the body and weighed 1,334 pounds in *Two Hundred Years of British Farm Livestock* (Stationery Office, 1996); today, this breed is normally slaughtered at 1 to 2 years old

Lesson One – Swine Breeds

REVIEW: Swine Breeds and Traits

10 minutes

Purpose:

Participants will review the swine breeds and traits by using ID flashcards.

Materials:

- Swine Breeds ID Flashcards
- *Swine Breeds Quiz*
- *Swine Breeds Quiz* – Answer Key

Facilitation Steps:

1. Break participants into small groups.
2. Distribute the ID flashcards and provide directions on how to use them.
3. After five minutes, collect the ID flashcards and separate participants.
4. Distribute the quiz.
5. Allow five minutes for participants to take the quiz.
6. Collect quizzes.

Name: _____ Class: _____

Swine Breeds Quiz

Directions: Select the best answer for each question below.

1. What breed is known to be white or pink in color?
 - A. American Yorkshire
 - B. Hampshire
 - C. Hereford
 - D. Duroc

2. What breed is known to have a “white belt” around its middle?
 - A. Chester White
 - B. Duroc
 - C. Hampshire
 - D. American Landrace

3. What breed looks like a Hereford cow?
 - A. Hampshire
 - B. Hereford
 - C. Pietrain
 - D. Tamworth

4. What breed is labeled “threatened” in the United States?
 - A. Duroc
 - B. Tamworth
 - C. American Yorkshire
 - D. Berkshire

5. What breed ranks number 1 in the United States for pork production?
 - A. Hereford
 - B. Pietrain
 - C. Hampshire
 - D. Poland China

6. What breed has a genetic defect that creates less desirable meat?
 - A. Duroc
 - B. Chester White
 - C. Pietrain
 - D. Hampshire

Swine

7. What breed is black with white on the face, legs, and tail?
 - A. Berkshire
 - B. Poland China
 - C. Hereford
 - D. American Yorkshire

8. What breed does not have sweat glands and needs to roll in the mud to keep cool?
 - A. Tamworth
 - B. Chester White
 - C. American Landrace
 - D. Poland China

9. What breed is black and white spotted with 50% of each color being preferred?
 - A. Chester White
 - B. Spotted Swine
 - C. Berkshire
 - D. Pietrain

10. What breed is all red?
 - A. Duroc
 - B. Hereford
 - C. American Landrace
 - D. Poland China

11. What breed is known as "The Mark of a Meat Hog?"
 - A. Berkshire
 - B. Tamworth
 - C. Spotted Swine
 - D. Hampshire

Swine Breeds Quiz – Answer Key

1. What breed is known to be white or pink in color?
A. American Yorkshire
B. Hampshire
C. Hereford
D. Duroc

2. What breed is known to have a “white belt” around its middle?
A. Chester White
B. Duroc
C. Hampshire
D. American Landrace

3. What breed looks like a Hereford cow?
A. Hampshire
B. Hereford
C. Pietrain
D. Tamworth

4. What breed is labeled “threatened” in the United States?
A. Duroc
B. Tamworth
C. American Yorkshire
D. Berkshire

5. What breed ranks number 1 in the United States for pork production?
A. Hereford
B. Pietrain
C. Hampshire
D. Poland China

6. What breed has a genetic defect that creates less desirable meat?
A. Duroc
B. Chester White
C. Pietrain
D. Hampshire

Swine

7. What breed is black with white on the face, legs, and tail?
A. Berkshire
B. Poland China
C. Hereford
D. American Yorkshire

8. What breed does not have sweat glands and needs to roll in the mud to keep cool?
A. Tamworth
B. Chester White
C. American Landrace
D. Poland China

9. What breed is black and white spotted with 50% of each color being preferred?
A. Chester White
B. Spotted Swine
C. Berkshire
D. Pietrain

10. What breed is all red?
A. Duroc
B. Hereford
C. American Landrace
D. Poland China

11. What breed is known as "The Mark of a Meat Hog?"
A. Berkshire
B. Tamworth
C. Spotted Swine
D. Hampshire

Lesson Two – Intro to Feeding and Management

Lesson Overview

Participants will learn about the feeding and management of swine.

Lesson Objectives

After completing this lesson, participants will be able to:

- Name foods that swine eat
- Explain how these foods help swine grow
- Define the three growth stages of swine
- Calculate a pig's number through notching
- List other practices required for swine production

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>What do Swine Eat?</i> worksheet • <i>What do Swine Eat?</i> – Answer Key	1. Print/photocopy <i>What do Swine Eat?</i> worksheet (one per participant)	10 minutes
LEARN	• <i>Swine Feeding and Management</i> slide presentation • <i>Feeding and Management</i> worksheet • <i>Feeding and Management</i> – Answer Key	1. Print/photocopy <i>Feeding and Management of Swine</i> worksheet (one per participant) 2. Prepare <i>Swine Feeding and Management</i> slide presentation for viewing	40 minutes
REVIEW	• <i>Swine Feeding and Management</i> Poster • <i>Swine Feeding and Management Quiz</i>	1. Print/photocopy <i>Swine Feeding and Management Quiz</i> (one per participant)	10 minutes

Lesson Two – Feeding and Management

FOCUS: Intro to Feeding and Management

10 minutes

Purpose:

Participants will be introduced to the foods that swine eat.

Materials:

- *What do Swine Eat?* worksheet
- *What do Swine Eat?* – Answer Key

Facilitation Steps:

1. Pass out the worksheet prior to or at the start of class and instruct participants on how to fill it out.
2. Give participants five minutes to complete the worksheet.
3. After this time, instruct participants to exchange papers.
4. Go over the answers with the class.
5. Collect the worksheets.

Swine

Name: _____ Class: _____

What do Swine Eat?

Directions: Cross off the foods that swine should **not** eat for proper growth.

Soy beans

Candy

Rice bran

Meat

Bread

Broken rice grains

Crackers

Farm grains

Corn

Milk

Vegetables

Fish

Fruits

Destillers' residues

Potatoes

What do Swine Eat? – Answer Key

Directions: Cross off the foods that swine should **not** eat for proper growth.

Soy beans

~~Candy~~

Rice bran

~~Meat~~

~~Bread~~

Broken rice grains

~~Crackers~~

Farm grains

Corn

~~Milk~~

Vegetables

~~Fish~~

~~Fruits~~

Destillers' residues

~~Potatoes~~

Lesson Two – Feeding and Management of Swine

LEARN: Feeding and Management of Swine

40 minutes

Purpose:

Participants will be introduced to the proper feeding and management of swine.

Materials:

- *Feeding and Management* slide presentation
- *Feeding and Management* worksheet
- *Feeding and Management – Answer Key*

Facilitation Steps:

1. Prepare the *Feeding and Management* slide presentation.
2. Distribute the worksheet and answer any questions
3. Present the *Feeding Management* slide presentation.

Slide 1: Title slide

Slide 2: What does it mean to eat like a pig?

Slide 3: Eating Habits of Swine

The phrase “eating like a pig” means that you eat a lot, or you eat without manners.

Can also mean you eat whatever you see.

While the latter normally is talking about eating everything without gaining weight, it does describe the eating habits of swine.

Swine are not picky eaters and will eat anything including roots, mushrooms, leaves, and any plant material.

Slide 4: Looking for food helps humans find a delicious treat.

While swine are domesticated, they did come from wild hogs. These hogs would root through grass and leaf litter in search of food. This habit has been carried down into domesticated swine.

The rooting nature of swine is used to help uncover a tasty treat.

Can you guess what it is?

Answer: Truffles

Slide 5: Things Swine Should Not Eat

Slide 6: Candy

Any food that is high in sugar will reduce the growth rates of swine

Slide 7: Dog Food

- High in salt and protein
- May contain pork
- There is a melamine toxic issue since dog food is not intended for swine

Slide 8: Cracked Corn

While swine can eat cracked corn, it does not have much nutrition and can contain mycotoxins, which can cause harm to swine

Slide 9: Milk

May contain viruses that will make swine sick.

Slide 10: Fish

Fish sitting around waiting to be fed to swine will attract viruses that can be harmful to swine.

Slide 11: Meat

While swine are considered omnivorous, they cannot eat meat due to the chance of spoiling and making them sick.

Slide 12: Fruits

Fruits such as apples, peaches, pears, and apricots contain pits and seeds. These substances contain a naturally occurring chemical called amygdalin. When the swine chew, this substance is broken down into cyanogenic glycoside, which can cause discomfort and even death.

Slide 13: Potatoes

- Contain glycoalkaloids, which are naturally occurring toxins. These toxins can cause a stomachache and death.
- Contain solanine, which causes diarrhea, destroys red blood cells, and causes heart failure.

Slide 14: What Should Swine Eat?

Slide 15: Soybeans

Slide 16: The Role of Soybeans

Soybeans are fed to swine because they are high in protein and provide missing ingredients that farm grains do not have. This includes amino acids such as lysine, threonine, and tryptophan. But for the soybeans to release their goodness they need to be heated and converted to a powder.

Slide 17: Farm Grains

Slide 18: The Role of Farm Grains

- Has more crude protein compared to corn
- Contains bioavailable phosphorous
- Contains amino acid lysine

Slide 19: Corn

Slide 20: The Role of Corn

Corn provides a major energy source in feed.

Slide 21: Vegetables

Slide 22: The Role of Vegetables

- Provide a diverse diet for swine
- Feeding vegetables that are no longer good for human consumption helps the swine and human by recycling this foodstuff into meat

Slide 23: Distillers' Spent Grains

Slide 24: The Role of Distiller's Spent Grains

- Spent grains are those leftover from alcohol production
- Have large amounts of crude protein

Slide 25: Broken Rice Grains

Slide 26: The Role of Broken Rice Grains

This ingredient is a good source of B vitamins especially thiamin.

Slide 27: Rice Bran

Slide 28: The Role of Rice Bran

High in unsaturated fats, which reduces the production of fat on swine.

Slide 29: Farmer-Made Feed vs. Pre-Made Mixes

Farmers can make up their own mixes for their swine, but certain stages of growth require certain feedstuffs.

To make sure that swine are getting the proper feed, many farmers choose pre-made mixes.

Regardless of which is picked, supplements need to be added to the feed to make sure it is balanced.

Slide 30: Piglet Requirements

- Piglets are defined as pigs that are 40 pounds or less
- A creep feed should be made available while the piglets are still receiving milk from their mother
- A creep feed introduces the piglet to solid food and prepares their digestive tract for it

Slide 31: Growing Pigs

- A growing pig is defined as a 40-to-125-pound pig
- A growing food ration is high in protein and nutritionally dense

Slide 32: Finishing Pigs

- A finishing pig is defined as 125 pounds
- A finishing pig ration is not as nutritionally dense and contains less protein

Slide 33: Outcome of Proper Feed

Swine should gain 1.5 to 1.7 pounds per day up to 110 pounds.

Past 110 pounds, swine should gain 1.8 to 2.2 pounds per day.

Slide 34: Other Needs for Swine:
Temperature

- Proper temperature is important for growth
- Keep the building well ventilated and heated if the environment requires it
- Allow enough space so that the swine can grow in girth and height

Slide 35: Other Needs for Swine: Water

- Hogs need a lot of water
- Water makes up to 2/3 of their body weight
- Piglets newly weaned are more susceptible to dehydration
- Always keep fresh water available and in dispensers that are clean and sanitized

Slide 36: Other Needs for Swine: Cleanliness

Water containers, food containers, and barn areas need to be clean to avoid diseases, which will reduce weight gain.

Slide 37: Farrowing Crate

A farrowing crate is a structure that a gilt or sow is placed in to keep the female from rolling over onto the piglets and crushing them.

Slide 38: Management Task: Ear Notching

Ear notching is a way of identifying the individual swine.

The right ear has five locations for numbers. These numbers are 1, 3, 81, 9, and 27.

To calculate the litter number, add the numbers together on the right ear.

The left ear is the number of the piglet in that litter.

There are three numbers associated with the left ear. These are 1, 3, and 9.

Slide 40: Management Task: Clipping Teeth

- The eight needle teeth should be clipped within a day of the piglet's birth
- These sharp teeth can cut other piglets and sow's utters
- Sows will refuse to feed piglets that hurt the utters with these teeth if not clipped

Slide 41: Management Task: Tail Docking

- While tail biting is not a problem for pigs raised outdoors, it is a problem for pigs raised indoors
- Tail docking is a process where the tail is cut one inch from the base when the piglet is one day old

Slide 42: Management Task: Castration

- Castration is important to reduce the aggression male hogs can develop toward other pigs and humans
- This task is also needed to prevent boar taint of the meat that is produced from sexually mature males

Feeding and Management

Directions: Answer the questions below with information from the slide presentation.

1. Why is it said that one eats like a pig?
2. What crop do pigs help find?
3. Why should swine not eat candy?
4. Why should swine not eat dog food?
5. Why should swine not eat cracked corn?
6. Why should swine not eat milk?
7. Why should pigs not eat fish?
8. Why should pigs not eat meat?
9. Why should pigs not eat fruits?
10. Why should pigs not eat potatoes?

Swine

11. What do soybeans add to swine feed?
12. Farm grains provide what to swine feed?
13. What does corn provide?
14. What do vegetables add to the diet of swine?
15. What does spent grain add to swine feed?
16. What does broken rice grain do for swine feed?
17. Rice bran adds what to swine feed?
18. What are the two choices of feed a farmer has?
19. Describe what a piglet is and its feeding requirement.
20. Describe what a growing pig is and its feeding requirement.

21. Describe what a finishing pig is and its feeding requirement.
22. If properly fed, how much growth should one expect?
23. Why is temperature important when it comes to swine production?
24. Why is keeping water available at all times important for swine production?
25. In swine production, why is cleanliness important?
26. Define farrowing crate.
27. Explain the process of ear notching.
28. What is clipping teeth and why is it important?
29. Explain tail docking and why it is important.
30. Give the two reasons why castration is important.

Feeding and Management – Answer Key

Directions: Answer the questions below with information from the PowerPoint.

1. Why is it said that one eats like a pig? The phrase “eating like a pig” means that you eat a lot or you eat without manners. Can also mean you eat whatever you see.
2. What crop do pigs help find? Truffles
3. Why should swine not eat candy? Any food that is high in sugar will reduce the growth rates of swine.
4. Why should swine not eat dog food? High in salt and protein. May contain pork. There is a melamine toxic issue since dog food is not intended for swine.
5. Why should swine not eat cracked corn? While swine can eat cracked corn, it does not have much nutrition and can contain mycotoxins, which can cause harm to swine.
6. Why should swine not eat milk? Milk may contain viruses that will make swine sick.
7. Why should pigs not eat fish? Fish sitting around waiting to be fed to swine will attract viruses that can be harmful to swine.
8. Why should pigs not eat meat? While swine are considered omnivorous, they cannot eat meat due to the chance of spoiling and making the swine sick.

9. Why should pigs not eat fruit? Fruits such as apples, peaches, pears, and apricots contain pits and seeds. These substances contain a naturally occurring chemical called amygdalin. When the swine chew, this substance is broken down into cyanogenic glycoside, which can cause discomfort and even death.
10. Why should pigs not eat potatoes? Potatoes contain glycoalkaloids, which are naturally occurring toxins. These toxins can cause a stomachache and death. Potatoes also contain solanine, which causes diarrhea, destroys red blood cells, and causes heart failure.
11. What do soybeans add to swine feed? Soybeans are fed to swine due to the fact that they are high in protein and provide missing ingredients that farm grains do not have. This includes amino acids such as lysine, threonine, and tryptophan. But for the soybeans to release their goodness they need to be heated and converted to a powder.
12. Farm grains provide what to swine feed? Has more crude protein compared to corn. Contains bioavailable phosphorous. Contains amino acid lysine.
13. What does corn provide? Corn provides a major energy source in feed.
14. What do vegetables add to the diet of swine? Vegetables provide a diverse diet for swine. Feeding vegetables that are no longer good for human consumption helps the swine and human by recycling this foodstuff into meat.
15. What does spent grain add to swine feed? Spent grains are those leftover from alcohol production. Have large amounts of crude protein.
16. What does broken rice grains do for swine feed? This ingredient is a good source of B vitamins especially thiamin.

17. Rice bran adds what to swine feed? Is high in unsaturated fats, which reduces the production of fat on swine.
18. What are the two choices of feed farmers have? Farmers can make up their own mixes for their swine but certain stages of growth require certain feedstuffs. To make sure that swine are getting the proper feed, many farmers choose pre-made mixes. Regardless of which is picked, supplements need to be added to the feed to make sure it is balanced.
19. Describe what a piglet is and its feeding requirement. Piglets are defined as pigs that are 40 pounds or less. A creeping feed should be made available while the piglets are still receiving milk from their mother. A creeping feed is one that introduces the piglet to solid food and gets their digestive tract prepared for solid food.
20. Describe what a growing pig is and its feeding requirement. A growing pig is defined as a 40-to-125-pound pig. A growing food ration is one that is high in protein and nutritionally dense.
21. Describe what a finishing pig is and its feeding requirement. A finishing pig is defined as 125 pounds. A finishing pig ration is one that is not as nutritionally dense and contains less protein.
22. If properly fed, how much growth should one expect? Swine should gain 1.5 to 1.7 pounds per day up to 110 pounds. Past 110 pounds, swine should gain 1.8 to 2.2 pounds per day.
23. Why is temperature important when it comes to swine production? Proper temperature is important for growth. Keep the building well ventilated and heated if the environment requires it. Allow enough space so that the swine can grow in girth and height.

24. Why is keeping water available at all times important for swine production? Hogs need a lot of water. Water makes up to $\frac{2}{3}$ their body weight. Piglets newly weaned are more susceptible to dehydration. Keep fresh water available at all times and in dispensers that are clean and sanitized.
25. In swine production, why is cleanliness important? Water containers, food containers, and barn areas need to be clean to avoid diseases, which will reduce weight gain.
26. Define farrowing crate. A farrowing crate is a structure that a gilt of sow is placed in to keep the female from rolling over onto the piglets and crushing them.
27. Explain the process of ear notching. Ear notching is a way of identifying the individual swine. The right ear has five locations for numbers. These numbers are 1, 3, 81, 9, and 27. To calculate the litter number, add the numbers together on the right ear. The left ear is the number of the piglet in that litter. There are three numbers associated with the left ear. These are 1, 3, and 9.
28. What is clipping teeth and why is it important? The eight needle teeth should be clipped within a day of the piglet's birth. These sharp teeth can cut other piglets and the sow's utters. Sows will refuse to feed piglets that hurt the utters with these teeth if not clipped.
29. Explain tail docking and why it is important. While tail biting is not a problem for pigs raised outdoors, it is a problem for pigs raised indoors. The docking of the tail is a process where the tail is cut one inch from the base when the piglet is one day old.
30. Give the two reasons why castration is important. Reduces aggression and prevents boar tainting of meat.

Lesson Two – Feeding and Management

REVIEW: Feeding and Management Review

10 minutes

Purpose:

Participants will review the information on feeding and management of swine and then will be tested on their knowledge.

Materials:

- Swine Feeding and Management Poster
- *Feeding and Management Quiz*
- *Feeding and Management Quiz – Answer Key*

Facilitation Steps:

1. Direct participants to the Swine Feeding and Management poster and instruct them to review the information presented.
2. After five minutes, pass out the quiz.
3. Give students five minutes to take the quiz.
4. Collect quizzes.

Name: _____ Class: _____

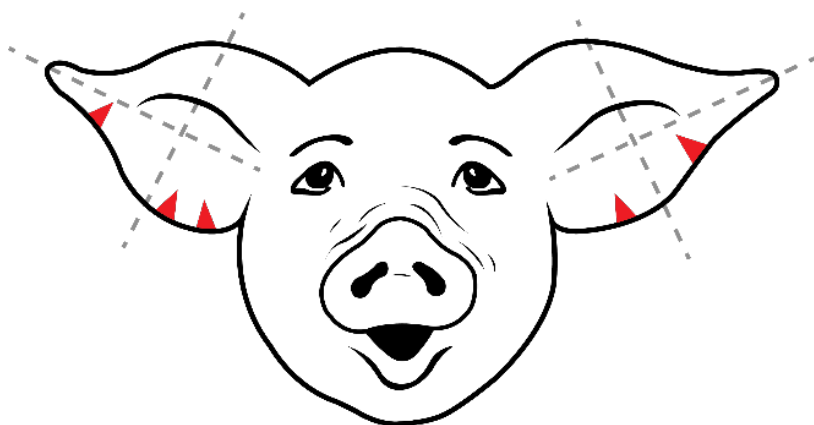
Feeding and Management Quiz

Directions: For the questions below, choose the correct answer.

1. When feeding swine, which of the ingredients below are poisonous to swine? Pick all that apply.
 - A. Soybeans
 - B. Vegetables
 - C. Milk
 - D. Fruits
 - E. Potatoes
2. When it comes to feeding swine, weight is not important. True or False
3. Docking the tails of piglets is only done to keep their butts clean. True or False
4. Feeding wet grain is not a problem when it comes to swine. True or False
5. A farrowing crate is used to prevent the sow from crushing the piglets. True or False
6. Feeding swine a diverse diet is not important. True or False
7. A pig that weighs less than 110 pounds can be expected to gain 1.8 to 2.2 pounds a day. True or False
8. A pig that weighs over 110 pounds can gain 1.5 to 1.7 pounds per day. True or False
9. Temperature is not an important factor when it comes to pigs gaining weight. True or False
10. When it comes to feeding, a piglet is defined as weighing
 - A. 40 pounds or less
 - B. 125 pounds or more
 - C. 40 to 125 pounds
11. An unclean environment will reduce weight gain in swine. True or False

Swine

12. Castrating makes male swine more aggressive. True or False
13. A growing pig is one that weighs
- A. 125 pounds or more
 - B. 40 pounds or less
 - C. 40 to 125 pounds
14. A finishing hog is one that weighs
- A. 40 to 125 pounds
 - B. 40 pounds or less
 - C. 125 pounds or more
15. Using the picture below, calculate the pig's ID number.



ID Number: _____

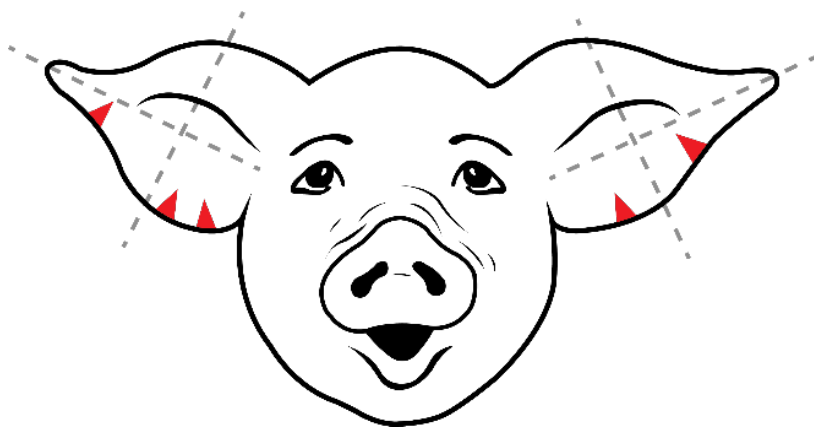
Feeding and Management Quiz – Answer Key

Directions: For the questions below, choose the correct answer.

1. When feeding swine, which of the ingredients below are poisonous to swine? Pick all that apply.
 - A. Soybeans
 - B. Vegetables
 - C. Milk
 - D. Fruits
 - E. Potatoes
2. When it comes to feeding swine, weight is not important. True or False
3. Docking the tails of piglets is only done to keep their butts clean. True or False
4. Feeding wet grain is not a problem when it comes to swine. True or False
5. A farrowing crate is used to prevent the sow from crushing the piglets. True or False
6. Feeding swine a diverse diet is not important. True or False
7. A pig that weighs less than 110 pounds can be expected to gain 1.8 to 2.2 pounds a day. True or False
8. A pig that weighs over 110 pounds can gain 1.5 to 1.7 pounds per day. True or False
9. Temperature is not an important factor when it comes to pigs gaining weight. True or False
10. When it comes to feeding, a piglet is defined as weighing
 - A. 40 pounds or less
 - B. 125 pounds or more
 - C. 40 to 125 pounds
11. An unclean environment will reduce weight gain in swine. True or False
12. Castrating makes male swine more aggressive. True or False

Swine

13. A growing pig is one that weighs
- A. 125 pounds or more
 - B. 40 pounds or less
 - C. 40 to 125 pounds
14. A finishing hog is one that weighs
- A. 40 to 125 pounds
 - B. 40 pounds or less
 - C. 125 pounds or more
15. Using the picture below, calculate the pig's ID number



ID Number: 5-4

Lesson Three – Swine Diseases and Parasites

Lesson Overview

Participants will learn about common swine diseases and parasites.

Lesson Objectives

After completing this lesson, participants will be able to:

- List common signs that swine show when they are suffering from diseases and/or parasites
- List the growth stages that swine diseases can be found in
- List one disease for each growth stage of swine
- Describe two ways that a farmer can reduce diseases and parasites in a herd
- Describe the difference between internal and external parasites
- List a common treatment for internal parasites

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Intro to Swine Diseases and Parasites</i> worksheet • <i>Intro to Swine Diseases and Parasites – Answer Key</i>	1. Print/photocopy <i>Intro to Swine Diseases and Parasites</i> worksheet (one per participant)	10 minutes
LEARN	• <i>Swine Diseases and Parasites</i> slide presentation • <i>Swine Diseases and Parasites</i> worksheet • <i>Swine Diseases and Parasites – Answer Key</i>	1. Print/photocopy <i>Swine Diseases and Parasites</i> worksheet (one per participant) 2. Prepare <i>Swine Diseases and Parasites</i> slide presentation for viewing	40 minutes
REVIEW	• <i>Swine Diseases and Parasites</i> trivia cards • <i>Swine Diseases and Parasites Quiz</i> • <i>Swine Diseases and Parasites Quiz – Answer Key</i>	1. Prepare <i>Swine Diseases and Parasites</i> trivia cards 2. Print/photocopy <i>Swine Diseases and Parasites Quiz</i> (one per participant)	10 minutes

Lesson Three – Swine Diseases and Parasites

FOCUS: Intro to Swine Diseases and Parasites

10 minutes

Purpose:

Participants will understand the general symptoms that indicate a pig is suffering from a disease or parasite.

Materials:

- *Intro to Swine Diseases and Parasites* worksheet
- *Intro to Swine Diseases and Parasites – Answer Key*

Facilitation Steps:

1. Distribute the worksheet prior to or at the beginning of class. Instruct participants on how to fill out the worksheet.
2. Give participants five minutes to fill out the worksheet.
3. After five minutes, have participants exchange worksheets.
4. Go over the correct answers.
5. Collect worksheets.

Name: _____ Class: _____

Intro to Swine Diseases and Parasites

Directions: Cross out the symptoms listed below that are not an indication that a pig is sick.

1. Greasy skin
2. Fever
3. Lack of appetite
4. Dead piglets
5. Drinking too much
6. Blue and swollen teats
7. Diarrhea
8. Sore throat
9. Sweating
10. Scratching the skin on everything
11. Sores on ears
12. Coughing
13. Sneezing
14. Runny nose
15. Stomach pain
16. Overeating
17. Isolating or wanting to be alone
18. Hair loss

Intro to Swine Diseases and Parasites – Answer Key

Directions: Cross out the symptoms listed below that are not an indication that a pig is sick

1. Greasy skin
2. Fever
3. Lack of appetite
4. Dead piglets
- ~~5. Drinking too much~~
6. Blue and swollen teats
7. Diarrhea
- ~~8. Sore throat~~
9. Sweating
10. Scratching the skin on everything
11. Sores on ears
12. Coughing
- ~~13. Sneezing~~
- ~~14. Runny nose~~
15. Stomach pain
- ~~16. Overeating~~
- ~~17. Isolating or wanting to be alone~~
18. Hair loss

Lesson Three – Swine Diseases and Parasites

LEARN: Swine Diseases and Parasites

40 minutes

Purpose:

Participants will learn about common diseases and parasites of swine.

Materials:

- *Swine Diseases and Parasites* slide presentation
- *Swine Diseases and Parasites* worksheet
- *Swine Diseases and Parasites* – Answer Key

Facilitation Steps:

1. Prepare the *Swine Diseases and Parasites* slide presentation.
2. Distribute the *Swine Diseases and Parasites* worksheet prior to or at the beginning of class.
3. Provide instruction on how to fill out the handout.
4. Present the *Swine Diseases and Parasites* slideshow.

Slide 1: Title slide

Slide 2: Swine Diseases

- Several different types of swine diseases that have many causes
- To aid in the study of these diseases, 6 of the most common swine diseases will be covered
- Diseases will be divided into swine growth stages and use

Slide 3: Pre-Weaning Period Swine Diseases

Slides 4-7: Exudative Dermatitis

- Known as “Greasy Pig”
- Caused by the bacteria *Staphylococcus hyicus*
- This bacteria enters the body through lesions in the skin, caused by biting, scratching, etc.
- Can appear on suckling piglets and piglets who are up to 2 or 3 days weaned

- Skin becomes wrinkled and flaky in the lesion area. The term “Greasy Pig” comes from the greasy feel of these areas.
- Most pigs who develop this disease will die. It is noted that up to 15% of each litter will develop this disease.
- Development of mange will cause sores on skin that can lead to Greasy Pig along with tail docking, iron injection, and teeth clipping
- Prevention practices include sterilizing the farrowing area between litters of piglets, and sprinkling hydrated lime that contains phenol disinfectant
- Treatment includes antibiotics given as a shot, dipping piglets and spraying sow with antibiotics, giving piglets electrolytes to prevent dehydration, and preventing any cases of mange in the herd
- If a gilt has delivered, consider cross suckling piglets to an older sow for three to four hours after birth

Slides 8-11: Coccidiosis

- Caused by three parasites called coccidia
- These parasites live in host cells located in the intestinal tract
- The three parasites are *Eimeria*, *Isospora*, and *Cryptosporidia*
- Very common disease in suckling pigs and those up to 15 weeks old
- Diarrhea, dehydration, and yellow to gray-green or blood stool are common signs of this disease
- The disease is transferred from one pig to another through feces of infected swine
- Prevention of this disease is possible by removing waste daily, controlling pests such as flies, cleaning farrowing houses between litters, and not letting hogs eat off the ground
- Treatment consists of giving sows an anticoccidial drug sprinkle on their food

from the time they enter the farrowing area through the lactation period

- Give piglets an antibiotic shot at six days old
- Sprinkle milk powder with a coccidiostat (an antiprotozoal) on top of the creep feed from the time the piglets are three days old until weaned

Slide 12: Post-Weaning Diseases

Slides 13-15: Respiratory Diseases

- Respiratory diseases come in two categories:
 - 1. Infects many pigs over a short period of time but they are not ill for long
 - 2. Occurs when many pigs are suffering but the disease persists indefinitely
- While both categories can cause death, the second can be more deadly because it continues to go on indefinitely
- Symptoms include coughing, sneezing, abdominal breathing, and reduced weight gain
- Treatment is an antibiotic
- Solution to this disease is two-fold.
 - One is to buy weaned piglets from the same individual.
 - Two is to have a policy of all in and all out. This gives the farmer a chance to air out the barn before bringing in new piglets since this disease is spread through the air.

Slides 16-19: Swine Dysentery

- Swine dysentery is spread from one pig to another through fecal matter.
- Main symptom is fecal matter that is soft to watery in nature. It can stain the area below the anus and has a distinctive smell that is very unpleasant. Blood may be present, and the animal may have a loss of appetite.
- Dehydration occurs and death is caused by high levels of salt due to lack of water in the system
- Survives in cold environments and can live from 2 to 60 days

- Prevention in the easiest treatment by monitoring the herd and isolating any pigs that show symptoms.
- Isolating pigs that have been off the farm is another approach to prevent the spread
- If a pig develops swine dysentery, it should be isolated for 60 days
- If swine dysentery breaks out in a herd, after the animals are moved out, the area needs to be cleaned and sterilized
- If a case of the disease occurs, do not place any animals in the space for 60 days
- In some instances, a veterinarian will give an antibiotic to the animal and/or recommend an antibiotic added to feed

Slide 20: Breeding Stock

Slides 21-26: Mastitis

- Mastitis is the inflammation and infection of the mammary glands
- Symptoms include lack of appetite at farrowing, fever, and swelling of the teats, which can also turn blue
- Other symptoms include the mucus membranes of the eyes turning red
- Piglets will also show signs such as loss of weight and/or not wanting to suckle if mastitis is present
- In some cases, mastitis can make the sow toxic, causing them to die in 24 hours
- Caused by bacteria entering the teat(s)
- While there are several types of bacteria that cause this problem, all of them can be found in the urine and feces of the sow if present
- Prevention is very important
- Make sure the farrowing house is clean
- Remove animal waste
- Disinfect the area between litters of pigs
- Spray the teats with an iodine solution designed for dairy cattle 24 hours before the sow gives birth. Continue with this process for two days after giving birth.
- If this occurs in more than one sow, a sample of the questionable teat's secretions will need to be taken and sent to a lab for identification
- An injection of an antibiotic may be prescribed or an addition of an antibiotic

to the top of the feed may be suggested to treat and/or prevent this problem

- The infected sow may also be isolated to keep the disease from spreading

Slides 27-30: Porcine Parvovirus

- You cannot eliminate this disease
- Transferred by the mouth, snout, or semen of pigs who have porcine parvovirus
- Once in the intestines, this virus is carried out of the body in the feces
- In a sow that has never had porcine parvovirus nor been vaccinated, the virus attacks the piglets through the placenta after the first 10 to 14 days. This attack results in the infected piglets dying and the uninfected piglets absorbing them into their body. This leads to very small litters of one or two surviving piglets.
- If the exposure occurs between 30 and 55 days, the piglets will die and be in a mummified state when born.
- If exposure happens from 55 to 60 days, then the piglets have a chance of being stillborn or will die shortly after birth. The cause of death can be misdiagnosed.
- If exposure occurs after the 70-day mark, then the piglet's immune system will step in to protect them.
- There is no treatment. The best approach is to routinely immunize gilts and boars prior to breeding. Also, giving all swine a booster shot once a year decreases the chances of the herd developing the disease.

Slide 31: Common Internal Parasites

Slides 32-37: Large Roundworms

- Most hogs will have *Ascaris* or large roundworms in their lifetime
- Especially present in swine two to three months old
- Sows normally do not get sick from large roundworms but are carriers
- Large roundworms are 6 to 12 inches long, pink in color, and sometimes have curved tails
- Live in the small intestine

- Feed on the gut lining and food/liquid that the pig ingests
- Females lay thousands of microscopic eggs a day
- Eggs hatch inside the swine's body and are carried out through fecal matter
- Enters the pig's body when the pig grazes on the ground where manure is located
- While the eggs are infective after one month outside the body, once consumed they hatch inside the stomach or small intestine
- Larvae hatch and go through the gut lining into the bloodstream, which carries the parasite to the liver
- Larvae stays there for a half to a full week
- They are then carried to the lungs through the bloodstream
- While the larvae is in the lungs, they cause the pig to cough, bringing the larvae up to the mouth where they can be swallowed
- Once swallowed, the larvae goes into the small intestine where they grow and mature for two months
- Parasite then exits through fecal matter
- Symptoms include not gaining weight due to reduce feed conversion, gut pain and stretching of the stomach due to the worms growing, a thumping sound in the lungs, and inflammation of the liver

Slides 38-39: Whipworms

- *Trichuris suis* are 2 to 2 ½ inches long and found in the cecum and large intestine
- The worms tunnel into the gut lining, which causes irritation, blood loss, and diarrhea
- Female whipworms produce eggs in pigs three months and older
- These eggs are deposited through fecal matter
- These microscopic eggs can survive for a long time outside the pig's body
- Eggs survive on the soil and fecal-covered floors in barns

Pigs get infected when grazing or eating off the floor of a barn.

Slides 40-42: Nodular Worms

- Named after the nodules formed in the cecum and colon by the host's body
- The larva stage of *Oesophagostomom* is walled in by a fibrous nodular to prevent the larva from moving throughout the host's body
- Some larvae will not get stopped in the cecum and colon by which they will travel to the gut and grow to less than one inch in length
- Eggs are passed in the feces and can survive up to one year on grass
- Pigs get infected when grazing or eating off the floor of a barn
- Pigs can develop scouring or diarrhea
- Economic loss of the intestines will occur if nodular worms are discovered in the intestines because intestines are used for sausage casings

Slides 43-45: Thread Worms

- Only attacks very young pigs
- Known as *Strongyloides*, they live in the small intestine
- Eggs are then spread through feces
- Prenatal infections are possible along with larvae being transferred to piglets through colostrum
- Scouring or piglet diarrhea is a result of thread worms
- Dehydration quickly takes hold, which can cause death if infestation is heavy
- In cases of light infestation, the piglet's natural immune system can provide protection
- To reduce thread worm exposure, keep the floor of the farrowing barn clean by removing waste
- Also, keep feed and water clean

Slides 46-49: Kidney Worms

- One inch long
- Black and white
- Found around the fat surrounding the kidney
- Known as *Stephanurus*
- Can take up to a year for kidney worms' eggs to show up, which is why this parasite is normally found only in sows

- Because kidney worms make home in the fat around the kidney and sometimes in the kidney, the eggs are spread through the urine
- While the kidney area is where these parasites can be found, they can also attack the liver, lungs, spleen, and even the back muscle
- Wooded areas and shaded farrowing barns are prime spots for the parasite
- Spread of this parasite occurs when infected hogs urinate on the ground or floor
- Infection occurs when the animal then eats grains/grass in this area along with infected earthworms
- Can also spread through skin contact with infected swine

Slides 50-52: Lung Worms

- Known as *Metastrongylus*
- One to two inches long
- White
- Found in clusters in the respiratory tract
- Eggs are coughed up, swallowed, and then passed through feces
- Eggs of the lung worm are ingested by earthworms
- This makes swine that are let out on pasture more likely to be infected due to their rooting nature
- As they root for tasty roots, they unearth infected earthworms, which are consumed with the roots
- Larvae move through the system by way of the lymphatic system
- This system moves the larvae from the small intestines to the heart and then to the lungs, which causes the thumping sound
- It is common to have coughing and pneumonia together in infected pigs
- Lungs should be examined for lung worms after death

Slides 53-54: Internal Parasite Treatment

- Cleanliness of the ground and floor is extremely important
- Making sure that swine are fed a healthy diet is another approach that will allow

the natural immune system to aid in protecting pigs from these parasite

- Keeping gilts away from contaminated areas
- Keeping weaned pigs away from older breeding stock
- Deworming, which will kill the parasites

Slide 55: External Parasites

Slides 56-58: Hog Lice

- Mature lice are 1/4 inch long and gray-brown in color
- Adults and nymphs can be found on the legs as well as folds of skin around the neck and ears
- Each female lays 90 eggs that are attached to the hair follicle
- In two weeks, the eggs hatch into nymphs
- Nymphs mature into adults in 10 to 14 days
- Nymphs and adults pierce the skin to feed on blood
- This feeding causes itching and irritation that can be seen as rubbing on everything by the infected hog
- Irritated skin can become thick and crack open, causing sores
- Sores can become infected, and the constant scratching can result in weight loss
- Examining the legs and folds in the skin can determine if hog lice is the problem

Slides 59-61: Mange

- Mange is caused by mange mites
- There are two types
- Itch mites burrow under the skin, creating winding tunnels that are between 0.1 and 1 inch
- Fluid released at the opening of the tunnel dries up to form nodules
- A toxin is produced by the mange mite that causes irritation and itching
- In response to the itching, infected animals rub the area, which leads to inflammation
- This is highly contagious between animals and humans, causing itching
- Follicular mite is the second type

- This mite is microscopic and cup-shaped
- All stages of the mite live in hair follicles
- Lives under the skin and causes nodular lesions that can break open, causing holes in the hide of the pig
- Controlling this mite is difficult since the mite lives deep in the hide

Slides 62-64: Ticks

- There are several types of ticks but the two that attack swine are referred to as hard and soft ticks
- Hard ticks include the American dog tick, brown dog tick, Gulf Coast tick, and Rocky Mountain Wood tick
- These ticks attach to the host, suck on blood for a long time, fall off the host, and lay eggs
- Soft ticks quickly feed on the host while the host is asleep
- When the animal wakes up, the soft tick has stopped feeding and left
- The soft tick in this example is the spinose tick
- Areas that the ticks have been feeding on become inflamed, itchy, and swollen
- The wounds can become infected
- Ticks are normally a problem for swine that are allowed to roam in the woods or fields

Slides 65-66: Stable Flies

- The stable fly is very similar to the house fly but with one painful difference and that is, they bite
- The stable fly's bite is irritating to the pig, can cause blood loss, and may lead to infection from the wound
- They are also known as vectors for certain swine diseases
- Control is the best form of prevention
- Stable flies lay their eggs in moist environments such as manure, moist hay, wet feed or grain, and moist plant material
- To control the stable flies, spread out any wet material so it can dry

Slides 67-69: Sticktight Flea

Swine

- Normally associated with poultry, this flea can also attack swine and settle in their ears
- While in the outside part of the ear, the flea feeds on blood and stays attached for several weeks
- While feeding, the female lays eggs that fall to the ground
- Eggs will hatch and the larvae will feed on organic matter in dry, protected areas
- In a month, the larvae will pupate and transform into adults
- Adults then take up home in the swine's ear
- Flea's blood sucking can cause sores in the ears, which in turn can lead to other infections of the open wounds

Slide 70: Control for External Parasites

- Beyond the individual recommendations for each external parasite, a pesticide

applied to the animal is the treatment for the pests.

- Also preventing the environment that can welcome external parasites. This means keeping the pigs' environment as clean and dry as possible.

Swine Diseases and Parasites

Directions: Fill in the detail for each disease and parasite in the slide presentation.

1. Stage of Disease:

Name of Disease:

Nickname:

Caused by:

How you get it:

When can it appear:

Symptoms:

Prevention:

Treatment:

2. Stage of Disease

Name of Disease:

Caused by:

How you get it:

When can it appear:

Symptoms:

Prevention:

Treatment:

Swine

3. Stage of Disease:

Name of Disease:

Categories of Disease:

Symptoms:

Prevention:

Treatment:

4. Stage of Disease:

Name of Disease:

How it Spreads:

Symptoms:

Prevention:

Treatment:

Swine

5. Stage of Disease:

Name of Disease:

Caused by:

Symptoms:

Prevention:

Treatment:

6. Stage of Disease:

Name of Disease:

Caused by:

Prevention:

Treatment:

Swine

7. Type of Parasite:

Common Name of Parasite:

Scientific Name:

Where They Live:

What They Feed On:

How Many Eggs to Females Lay in a Day:

Where the Eggs Hatch:

What Carries The Eggs Out of the Body:

How it Enters the Body:

When are Eggs Infective:

What Carries Larvae to the Liver:

How Long do Larvae Stay in the Liver:

What do Larvae in the Lungs Cause the Pig to do:

How Long do Larvae Grow in the Small Intestine:

How Old are Most Infected Swine:

Do Sows Normally Get Sick:

Parasite Appearance:

Symptoms:

Swine

8. Type of Parasite:

Name of Parasite:

Scientific Name:

Length of Parasite:

Where In the Pig They're Found:

Can the Eggs Survive Outside the Body:

Where in the Environment They're Found:

Cause of Infection:

Symptoms:

Age of Pigs Females Produce Eggs in:

What Eggs are Deposited Through:

9. Type of Parasite:

Name of Parasite:

Where Name Comes From:

What Eggs are Passed in:

Cause of Infection:

How Long Eggs Can Survive On Grass:

Symptoms:

Cause of Economic Loss:

Swine

10. Type of Parasite:

Name of Parasite:

Scientific Name:

Where They Live:

What Kind of Pigs It Attacks:

How Eggs are Spread:

Symptoms:

11. Type of Parasite:

Name of Parasite:

Appearance:

Where They're Found in the Pig:

Scientific Name:

Where They're Found in the Environment:

Pig They're Commonly Found in:

What Eggs are Spread Through:

What They Attack:

How it Spreads:

12. Type of Parasite:

Name of Parasite:

Scientific Name:

Appearance:

Where They're Found:

What Eggs are Passed Through:

What Creature Ingests the Eggs:

Cause of Infection:

How Larvae Move Through the System:

Path of Larvae:

Symptoms:

Treatment for Internal Parasites:

13. Type of Parasite:

Name of Parasite:

Appearance:

Where They're Found:

Number of Eggs Females Lay:

What Eggs are Attached to:

How Long it Takes for Eggs to Hatch into Nymphs:

How Long it Takes for Nymphs to Become Adults:

Symptoms:

Swine

14. Type of Parasite:

Name of Parasite:

Caused by:

Description of Two Parasite Types:

Symptoms:

15. Type of Parasite:

Name of Parasite:

Description of the Two Types that Attack Swine:

Swine Ticks are a Problem for:

Symptoms:

Swine

16. Type of Parasite:

Name of Parsite:

Difference Between this Parasite and a House Fly:

Where They Lay Eggs:

Symptoms:

17. Type of Parasite:

Name of Parasite:

Type of Animal They're Normally Associated with:

Where They Settle:

How Long They Stay Attached:

What Females do While Feeding:

What Larvae Feed on:

How Long It Takes for Larvae to Become Adults:

Symptoms:

Treatment for External Parasites:

Swine Diseases and Parasites – Answer Key

Directions: Fill in the detail for each disease and parasite in the slide presentation.

1. Stage of Disease: **Prewaning**

Name of Disease: **Exudative dermatitis** Nickname: **Greasy pig**

Caused by: **Caused by bacteria *Staphylococcus hyicus***

How you get it: **This bacteria enters the body through lesions in the skin caused by biting, scratching, etc.**

When can it appear: **Can appear on suckling piglets and piglets who are up to two to three days weaned**

Symptoms: **Skin becomes wrinkled and flaky in the lesion area. The term “greasy pig” comes from the greasy feel of these areas. Most pigs who develop this disease will die. It is noted that up to 15% of each litter will develop this disease. The development of mange will cause sores on skin that can lead to greasy pig along with tail docking, iron injection, and teeth clipping.**

Prevention: **Prevention practices include sterilizing the farrowing area between litters of piglets and sprinkling hydrated lime that contains phenol disinfectant.**

Treatment: **Treatment includes antibiotics given as a shot, dipping piglets and spraying sow with antibiotics, giving piglets electrolytes to prevent dehydration, and preventing any cases of mange in the herd. If a gilt has delivered, consider cross suckling piglets to an older sow for three to four hours after birth.**

2. Stage of Disease: **Prewaning**

Name of Disease: **Coccidiosis**

Caused by: **Three parasites called coccidia. These parasites live in host cells located in the intestinal tract. The three parasites are Eimeria, Isospora and Cryptosporidia.**

How you get it: **The disease is transferred from one pig to another through feces of infected swine.**

When can it appear: **Very common disease in suckling pigs and those up to 15 weeks old**

Symptoms: **Diarrhea, dehydration, and yellow to grey green or blood stool are common signs of this disease.**

Prevention: **Prevention of this disease is possible by removing waste daily, controlling pests such as flies, cleaning farrowing houses between litters, and not letting hogs eat off the ground.**

Treatment: Treatment consists of giving sows an anticoccidial drug sprinkle on their food from the time they enter the farrowing area through the lactation period and giving piglets an antibiotic shot at six days old. Sprinkle milk powder with a coccidiostat (an antiprotozoal) on top of the creep feed from the time the piglets are 3 days old until weaned.

3. Stage of Disease: Postweaning

Name of Disease: Respiratory Diseases

Categories of Disease: Respiratory diseases come in two categories. One infects many pigs over a short period of time but they are not ill for long. The second occurs when many pigs are suffering but the disease persists indefinitely.

Symptoms: Symptoms include coughing, sneezing, abdominal breathing, and reduced weight gain. While both categories can cause death, the 2nd one can cause more death because it continues to go on indefinitely.

Prevention: Solution to this disease is two-fold. One is to buy weaned piglets from the same individual. Two is to have a policy of all in and all out. This gives the farmer a chance to air out the barn before bringing in new piglets since this respiratory disease is spread through the air.

Treatment: Antibiotic

4. Stage of Disease: **Postweaning**

Name of Disease: **Swine Dysentery**

How it Spreads: **Swine dysentery is spread from one pig to another through fecal matter**

Symptoms: **Symptoms are fecal matter that is soft to watery in nature. It can stain the area below the anus and has a distinctive smell that is very unpleasant. Blood may be present and the animal will have a loss of appetite. Dehydration occurs and death is caused by high levels of salt due to a lack of water in the system. This disease survives in cold environments and can live from 2 to 60 days.**

Prevention: **Prevention is the easiest treatment by monitoring the herd and isolating any pigs that show symptoms. Isolating any pigs that have been off the farm is another approach to prevent the spread. If a pig develops swine dysentery, this animal should be isolated for 60 days. Regardless if swine dysentery breaks out in a herd, after the animals have been moved out, the area needs to be cleaned and sterilized. If a case of swine dysentery occurred, do not place any animals in the space for 60 days.**

Treatment: **In some cases, a veterinarian will give an antibiotic to the animal and/or recommend an antibiotic added to feed.**

5. Stage of Disease: **Breeding Stock**

Name of Disease: **Mastitis**

Caused by: **The cause of this is bacteria entering the teat(s). While there are several types of bacteria that cause this problem, all of them can be found in the urine and feces of the sow if present.**

Symptoms: **Symptoms of this disease include lack of appetite at farrowing, fever, and swollen teats, which can also turn blue. Another symptom is the mucus membranes of the eyes turning red. Piglets will also show signs if mastitis is present. This includes loss of weight and/or not wanting to suckle. In some cases, mastitis can make the sow toxic, which will cause them to die in 24 hours.**

Prevention: **Prevention is very important and starts with making sure that the farrowing house is clean. Remove animal waste. Disinfect the area between litters of pigs. Spray the teats with an iodine solution designed for dairy cattle 24 hours before the sow is to give birth. Continue with this process for 2 days after giving birth.**

Treatment: **If this occurs in more than one sow, a sample of the questionable teat's secretions will need to be taken and sent to a lab for identification. An injection of an antibiotic may be prescribed or an addition of an antibiotic to the top of the feed may be suggested to treat and/or prevent this problem. The infected sow may also be isolated to keep the disease from spreading.**

6. Stage of Disease: **Breeding Stock**

Name of Disease: **Porcine Parvovirus**

Caused by: It is transferred by the mouth, snout, or semen of pigs who have porcine parvovirus. Once in the intestines, this virus is carried out of the body in the feces.

Symptoms: In a sow that has never had porcine parvovirus nor been vaccinated, the virus attacks the piglets through the placenta after the first 10 to 14 days. This attack results in the infected piglets dying the uninfected piglets absorbing them into their body. This leads to very small litters of one or two surviving piglets. If the exposure occurs between 30 and 55 days, the piglets will die and be in a mummified state when born. If exposure happens from 55 to 60 days, then the piglets have a chance of being stillborn or will die shortly after birth. The cause of the death can be misdiagnosed. If exposure occurs after the 70 day mark, then the piglet's immune system will step in to protect them.

Prevention: The best approach is to routinely immunize gilts and boars prior to breeding. Also, giving all swine a booster shot once a year decreases chances of the herd developing this disease.

Treatment: **No treatment**

7. Type of Parasite: Internal Parasite

Common Name of Parasite: Large Roundworm

Scientific Name: *Ascaris*

Where They Live: Small intestine

What They Feed On: The gut lining and food/liquid that the pig ingests

How Many Eggs to Females Lay in a Day: Thousands of microscopic eggs

Where the Eggs Hatch: Inside the swine's body, stomach or small intestine

What Carries The Eggs Out of the Body: Fecal matter

How it Enters the Body: Pigs grazing on the ground where manure is located

When are Eggs Infective: After one month outside the body

What Carries Larvae to the Liver: The bloodstream

How Long do Larvae Stay in the Liver: Larvae stays here for a half to a full week

What do Larvae in the Lungs Cause the Pig to do: Cough

How Long do Larvae Grow in the Small Intestine: Two months

How Old are Most Infected Swine: Two to three months

Do Sows Normally Get Sick: No but they are carriers

Parasite Appearance: 6 to 12 inches long, pink in color, and sometimes have curved tails

Symptoms: Not gaining weight due to reduce feed conversion, gut pain and stomach stretching due to the worms growing, a thumping sound in the lungs, and inflammation of the liver.

8. Type of Parasite: Internal Parasite

Name of Parasite: Whipworms

Scientific Name: *Trichuris suis*

Length of Parasite: 2 to 2½ inches

Where In the Pig They're Found: Cecum and large intestine

Can the Eggs Survive Outside the Body: Yes

Where in the Environment They're Found: Soil and fecal-covered floors in barns

Cause of Infection: Pigs get infected when grazing or eating off the floor of a barn.

Symptoms: Irritation, blood loss, and diarrhea

Age of Pigs Females Produce Eggs in: 3 months and older

What Eggs are Deposited Through: Fecal matter

9. Type of Parasite: Internal Parasite

Name of Parasite: Nodular Worm

Where Name Comes From: The name nodular worms comes from the fact that nodules are formed in the cecum and colon by the host's body.

What Eggs are Passed in: Feces

Cause of Infection: Pigs get infected when grazing or eating off the floor of a barn

How Long Eggs Can Survive On Grass: 1 year

Symptoms: Pigs can develop scouring or diarrhea

Cause of Economic Loss: Nodular worms are discovered in the intestines due to the fact that intestines are used for sausage casings.

10. Type of Parasite: Internal Parasite

Name of Parasite: Thread Worm

Scientific Name: *Strongyloides*

Where They Live: Small intestine

What Kind of Pigs It Attacks: Very young pigs

How Eggs are Spread: Through feces

Symptoms: Scouring or piglet diarrhea, dehydration, death (due to dehydration)

11. Type of Parasite: Internal Parasite

Name of Parasite: Kidney Worm

Appearance: 1 inch long, black and white

Where They're Found in the Pig: Around the fat surrounding the kidney

Scientific Name: *Stephanurus*

Where They're Found in the Environment: Wooded areas and shaded farrowing barns

Pig(s) They're Commonly Found in: Sows

What Eggs are Spread Through: Urine

What They Attack: Kidney, liver, lungs, spleen, and even the back muscle

How it Spreads: Infected hogs urinate on the ground or floor. Infection occurs when the animal then eats grains/grass in this area along with infected earthworms. It can also spread through skin contact with infected swine.

12. Type of Parasite: Internal Parasite

Name of Parasite: Lung Worm

Scientific Name: *Metastrongylus*

Appearance: 1 to 2 inches in length and are white in color

Where They're Found: Clusters in the respiratory tract

What Eggs are Passed Through: Feces

What Creature Ingests the Eggs: Earthworms

Cause of Infection: Pigs eating infected earthworms

How Larvae Move Through the System: By way of the lymphatic system.

Path of Larvae: Small intestines to the heart and then to the lungs.

Symptoms: It is common to have the coughing and pneumonia together in infected pigs.

Treatment for Internal Parasites

- Cleanliness of the ground and floor is extremely important
- Making sure that swine are fed a healthy diet is another approach that will allow the natural immune system to aid in the defense of these parasites
- Keeping gilts away from contaminated areas
- Keeping weaned pigs away from older breeding stock
- Deworming, which will kill the parasites

13. Type of Parasite: External Parasite

Name of Parasite: Hog Lice

Appearance: Mature lice are ¼-inch long and gray-brown in color

Where They're Found: Adults and nymphs can be found on the legs and folds of skin around the neck and ears.

Number of Eggs Females Lay: 90 eggs

What Eggs are Attached to: The hair follicle

How Long it Takes for Eggs to Hatch into Nymphs: Two weeks

How Long it Takes for Nymphs to Become Adults: 10 to 14 days

Symptoms: Itching and irritation that can be seen as rubbing on everything by the infected hog, sores, and weightloss.

14. Type of Parasite: External Parasite

Name of Parasite: Mange

Caused by: Mange is caused by mange mites

Description of Two Parasite Types: Itch mites burrow under the skin, creating winding tunnels that are between 0.1 and 1 inch. Fluid that is released at the opening of the tunnel dries up to form nodules. A toxin is also produced by the mange mite that causes irritation and itching. In response to the itching, infected animals rub the area, which causes inflammation.

Follicular mite is the second type. This mite is microscopic and cup-shaped. All stages of the mite live in hair follicles. This mite lives under the skin and causes nodular lesions that can break open causing holes in the hide of the pig. Controlling this mite is difficult as the mite lives deep in the hide.

Symptoms: Itching, irritation, inflammation, and lesions

15. Type of Parasite: External Parasite

Name of Parasite: Tick

Describe the Two Types that Attack Swine: Hard and soft ticks. Hard ticks include the American dog tick, brown dog tick, Gulf Coast tick, and Rocky Mountain Wood tick. These ticks attach to the host, suck on blood for a long period of time, fall off the host and lay eggs.

Soft ticks feed on the host while the host is asleep and their feeding happens quickly. When the animal wakes up, the soft tick has stopped feeding and left. The soft tick in this example is the spinose tick.

Swine Ticks are a Problem for: Swine that are allowed to roam in the woods or fields

Symptoms: Areas that the ticks have been feeding on become inflamed, itch, and swell. The wounds can become infected.

16. Type of Parasite: External Parasite

Name of Parasite: Stable Fly

Difference Between this Parasite and a House Fly: The stable fly is very similar to the house fly but with one painful difference and that is, they bite.

Where They Lay Eggs: Stable flies lay their eggs in moist environments such as manure, moist hay, wet feed or grain, and moist plant material.

Symptoms: The stable fly's bite is irritating to the pig, can cause blood loss, and may lead to infection from the wound.

17. Type of Parasite: External Parasite

Name of Parasite: Sticktight Flea

Type of Animal They're Normally Associated with: Poultry

Where They Settle: In the pigs' ears

How Long They Stay Attached: Several weeks

What Females do While Feeding: Lay eggs that will fall to the ground

What Larvae Feed on: Organic matter that is located in dry, protected areas.

How Long It Takes for Larvae to Become Adults: In a month, the larvae will pupate and transform into adults.

Symptoms: The sticktight flea's sucking of blood can cause sores in the ears, which in turn can lead to other infections of the open wounds.

Treatment for External Parasites

- Beyond the individual recommendations for each external parasite, a pesticide applied to the animal is the treatment for the pests
- Also preventing the environment that can welcome external parasites. This means keeping the pig's environment as clean and dry as possible

Lesson Three – Swine Diseases and Parasites

REVIEW: Swine Diseases and Parasites Review

10 minutes

Purpose:

Participants will work in pairs to review the diseases and parasites of swine using trivia cards.

Materials:

- Swine Diseases and Parasites Trivia Cards
- *Swine Diseases and Parasites Quiz*
- *Swine Diseases and Parasites Quiz – Answer Key*

Facilitation Steps:

1. Break participants into pairs.
2. Pass out the Swine Diseases and Parasites Trivia Cards and instruct participants on how to use them.
3. Give participants five minutes to review the diseases and parasites.
4. Collect the cards.
5. Instruct participants to go back to their seats.
6. Distribute out the quiz.
7. Give participants five minutes to complete the quiz.
8. Collect quizzes.

Name: _____ Class: _____

Swine Diseases and Parasites Quiz

Directions: After reading each statement, circle the correct answer.

1. Greasy pig is the common name for exudative dermatitis. True or False
2. All parasites are handled by deworming the swine. True or False
3. Removing swine waste daily, cleaning the environment between litters of pigs, and feeding swine a healthy diet are some of the approaches to preventing disease and parasite problems. True or False
4. Coccidiosis is caused by three parasites that are commonly known as coccidian. True or False
5. Weight gain is a sign that the pig is sick. True or False
6. Respiratory diseases of swine are broken into three categories. True or False
7. Mastitis causes a staining of the area right below the anus of the animal. True or False
8. Mastitis is caused by bacteria entering the teat(s). True or False
9. Porcine Parvovirus can be eliminated from the environment forever by just sterilizing the farrowing area. True or False
10. Sows normally do not get sick with large roundworms but are carriers. True or False
11. Whipworms do not survive a long period of time outside the swine's body. True or False
12. Nodular worms get their name from the nodules that are formed to help the parasite move through the swine's body. True or False
13. Thread worms only attack older pigs. True or False
14. Kidney worms can be found in the fat around the kidney along with the kidney by which the eggs are spread through urine. True or False
15. Earthworms ingest lung worm, which how this parasite is spread. True or False
16. Keeping gilts away from contaminated areas is a way of controlling internal parasites. True or False
17. Constantly scratching can be a sign that the pig has hog lice. True or False
18. Mange is not highly contagious. True or False
19. Mange mites are broken into two types. True or False
20. Stable flies do not transfer other swine diseases. True or False
21. Sticktight fleas can also be found on poultry. True or False
22. Sticktight fleas settle in the folds around the neck and legs of swine. True or False
23. Eating off the ground or off the floor of a barn does not cause a disease and/or parasite issue in swine. True or False
24. Only soft ticks attack swine. True or False
25. The only treatment required for both internal and external parasites is to make sure that the animal is hydrated. True or False

Swine Diseases and Parasites Quiz – Answer Key

Directions: After reading each statement, circle the correct answer.

1. Greasy pig is the common name for exudative dermatitis. **True** or False
2. All internal parasites are handled by deworming the swine. **True** or False
3. Removing swine waste daily, cleaning the environment between litters of pigs, and feeding swine a healthy diet are some of the approaches of preventing disease and parasite problems. **True** or False
4. Coccidiosis is caused by three parasites that are commonly known as coccidian. **True** or False
5. Weight gain is a sign that the pig is sick. True or **False**
6. Respiratory diseases of swine are broken into three categories. True or **False**
7. Mastitis causes a staining of the area right below the anus of the animal. True or **False**
8. Mastitis is caused by bacteria entering the teat(s). **True** or False
9. Porcine Parvovirus can be eliminated from the environment forever by just sterilizing the farrowing area. True or **False**
10. Sows normally do not get sick with large roundworms but are carriers. **True** or False
11. Whipworms do not survive a long period of time outside the swine's body. True or **False**
12. Nodular worms get their name from the nodules that are formed to help the parasite move through the swine's body. True or **False**
13. Thread worms only attack older pigs. True or **False**
14. Kidney worms can be found in the fat around the kidney along with the kidney by which the eggs are spread through urine. **True** or False
15. Earthworms ingest lung worm, which how this parasite is spread. **True** or False
16. Keeping gilts away from contaminated areas is a way of controlling internal parasites. **True** or False
17. Constantly scratching can be a sign that the pig has hog lice. **True** or False
18. Mange is not highly contagious. **True** or False
19. Mange mites are broken into two types. **True** or False
20. Stable flies do not transfer other swine diseases. True or **False**
21. Sticktight fleas can also be found on poultry. **True** or False
22. Sticktight fleas settle in the folds around the neck and legs of swine. True or **False**
23. Eating off the ground or off the floor of a barn does not cause a disease and/or parasite issue in swine. True or **False**
24. Only soft ticks attack swine. True or **False**
25. The only treatment required for both internal and external parasites is to make sure that the animal is hydrated. True or **False**

Lesson Four – Swine Reproductive Systems

Lesson Overview

Understand the main reproductive systems of the male and female pig. Allowing for students to gain understanding of the main parts and functions of the pig reproductive system.

Lesson Objectives

After completing this lesson, participants will be able to:

- Display knowledge of both male and female pig reproductive systems.
- Understand the parts and functions of pig reproduction.

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• Whiteboard • Marker • <i>Pig Reproductive Focus List</i>	1. Print/photocopy <i>Pig Reproductive Focus List</i> (one per participant) 2. Write the titles of each list on the whiteboard	5 minutes
LEARN	• <i>Pig Reproductive Systems</i> slide presentation • <i>Pig Reproductive Systems Student Notes</i> • <i>Pig Reproductive Systems Student Notes - Answer Key</i> • <i>Swine Reproduction Poster</i> for reference	1. Prepare <i>Pig Reproductive Systems</i> slide presentation for viewing 2. Print/photocopy <i>Pig Reproductive Systems Student Notes</i> (one per participant)	30 minutes
REVIEW	• <i>Pig Reproductive System Worksheet</i> • <i>Pig Reproductive System Worksheet - Answer Key</i> • <i>Swine Reproduction Poster</i> for reference	1. Print/photocopy <i>Pig Reproductive System Worksheet</i> (one per participant)	10-15 minutes

Lesson Four – Swine Reproductive System

FOCUS: Swine Anatomy

5 minutes

Purpose:

Participants work in groups or individually to check how much they know about reproductive parts and functions.

Materials:

- Whiteboard
- Marker
- *Pig Reproductive Focus List*
- *Swine Reproduction Poster* for reference

Facilitation Steps:

1. Write two titles on the whiteboard: Male Reproduction and Female Reproduction.
2. Have participants discuss and write down on their list the different parts that make up each part of the reproductive system for both male and female reproduction of the pig.
3. After a few minutes, discuss the answers participants wrote down on their *Pig Reproductive Focus List*.
4. End with talking about how participants will learn the different parts of the pig reproduction systems and reflect on the pig reproductive system parts that they knew versus the parts that they learned by the end of the lesson.

Name: _____ Class: _____

Pig Reproductive Focus List

Male Reproduction	Female Reproduction

Lesson Four – Swine Reproductive System

LEARN: Swine Reproductive System

30 minutes

Purpose:

Participants will learn the parts and function of the pig reproductive system.

Materials:

- *Pig Reproductive System* slide presentation
- *Pig Reproductive System Student Notes*
- *Pig Reproductive System Student Notes - Answer Key*

Facilitation Steps:

1. Look over the *Pig Reproductive System* slide presentation to get a good understanding of what you will be presenting.
2. Hand out the *Pig Reproductive System Student Notes* to participants prior to or at the beginning of class.
3. Present the *Pig Reproductive System* slide presentation to the class.

Slide 1: Title Slide

Slide 2: Male and Female Reproductive System

- The reproductive process between pigs depends on the right conditions of both a boar (male) and sow (female)
- Male factors include:
 - Ability to mate
 - Physical willingness
 - Ability to produce normal sperm in adequate numbers
- Female factors include:
 - Anatomical and physiological workings of the reproductive system must function properly

Slide 3: Female Reproduction

Slide 4: Female Reproduction Parts

- Vulva
- Vagina
- Cervix
- Uterus
- Oviducts
- Ovaries

Slides 5-9: Female Reproduction

- Vulva:
 - External genitalia of the female pig
 - Often swells and changes color near the time of estrus
- Vagina:
 - Approximately 12 to 18 inches long
 - Connects the cervix to the external genitalia
 - Passageway from the uterus to the outside of the reproduction tract
 - Bladder empties into the vagina on the floor of the vagina, approximately two inches from external opening
 - Houses the clitoris
- Cervix:
 - Approximately one inch in diameter
 - About six to eight inches in length
 - Connects the vagina and uterus
 - Made of tough connective tissue
 - Includes five interdigitating pads – these provide pressure points for locking of the penis
 - Will dilate to accommodate the penis and for the birth canal
- Uterus:
 - Uterine body is located at the junction of the two uterine horns
 - Birth canal of the pig
- Oviducts:
 - Oviducts are near the ovaries
 - Receive the egg from the ovary at ovulation
 - Lining of the oviducts propel the eggs to the horns of the uterus

- Ovary:
 - Source for both reproductive hormones and eggs (ova)
 - Follicles appear from hormones FSH and LH as small, blister-like structures that contain an egg
 - Follicles become larger and will release the eggs (ovum) at estrus

Slide 10: Male Reproduction

Slide 11: Male Reproduction Parts

- Penis
- Urethra
- Vas deferens
- Scrotum
- Epididymis
- Testes

Slides 12-15: Male Reproduction

- Penis:
 - Final structure of transfer of sperm into the female
 - Tough fibroelastic tissue supplied with blood and nerves
 - Penis extends through an opening (prepuce) on the abdomen
- Urethra:
 - Passes through the center of the penis
 - Responsible for transport of both semen and urine
 - Urine enters the urethra by relaxation of a muscle under voluntary control
 - During erection and ejaculation relaxation of this muscle is prevented
 - Prevents urine from entering the semen
- Vas Deferens:
 - Muscular tube that at ejaculation propels the sperm from the tail of the epididymis on the testes up through the inguinal canal and into the urethra
 - Merge into a single tube to the urethra

- Moves sperm from the epididymis to the penis
- Scrotum:
 - Where the testicles are located
 - Pouch that helps to protect and regulate temperature
 - Remains very close to the body
- Epididymis:
 - Tightly adhered tube outside the testicles highly coiled tube
 - Sperm is stored and matures in this tube
- Testes:
 - Produce sperm and hormones
 - Testes are anatomically upside down compared to other species
 - Sperm moves from the testes through the seminiferous tubules to the epididymis

Name: _____ Class: _____

Pig Reproductive System Student Notes

Male and Female Reproductive System

- The reproductive process between pigs depends on the right conditions of both a _____ (male) and _____ (female)
- The male factors include:
 - physical willingness
 - ability to produce normal sperm in adequate numbers
- The female factors include
 - The _____ and _____ workings of the reproductive system must function properly

Female Reproduction Parts

-
-
-
-
-
-

Vulva:

- External genitalia of the female pig
- Often swells and changes _____ near the time of estrus

Vagina

- Approximately _____ - _____ inches long
- Connects the cervix to the external genitalia
- The passageway from the uterus to the outside of the reproduction tract
- The bladder empties into the vagina on the floor of the vagina approximately two inches from external opening
- Houses the clitoris

Cervix

- Approximately 1 inch in diameter
- About _____ - _____ inches in length
- Connects the vagina and uterus
- Made of tough connective tissue
- Includes 5 interdigitating pads – these provide pressure points for locking of the _____
- Will dilate to accommodate the penis and for the birth canal

Swine

Uterus

- Uterine body is located at the junction of the two uterine horns
- _____ of the pig

Oviducts

- Oviducts are near the _____
- Receive the egg from the ovary at ovulation
- Lining of the oviducts _____ the eggs to the horns of the uterus

Ovary

- Source for both reproductive hormones and _____
- Follicles appear from hormones FSH and LH as small, blister-like structures that contain an egg
- Follicles become larger and will release the eggs (ovum) at _____

Male Reproductive Parts

-
-
-
-
-

Penis

- Final structure of transfer of sperm into the female
- Tough fibroelastic tissue supplied with blood and nerves
- Penis extends through an opening (_____) on the abdomen

Urethra

- Passes through the _____ of the penis
- Responsible for transport of both semen and urine
- Urine enters the urethra by relaxation of a muscle under voluntary control
- During erection and ejaculation relaxation of this muscle is prevented
- Prevents _____ entering the _____

Vas Deferens

- Muscular tube that at _____ propels the sperm from the tail of the epididymis on the testes up through the inguinal canal and into the urethra
- Merge into a single tube to the _____
- Moves sperm from epididymis to penis

Scrotum

- Where the testicles are located
- _____ that helps to protect and regulate temperature
- Remains very close to the body

Swine

Epididymis

- Tightly adhered tube outside the testicles
- Highly _____ tube
- Sperm is stored and matures in this tube

Testes

- Produce _____ and hormones
- Testes are anatomically _____ compared to other species
- Sperm moves from the testes through the seminiferous tubules to the epididymis

Name: _____ Class: _____

Pig Reproductive System Student Notes - Answer Key

Male and Female Reproductive System

- The reproductive process between pigs depends on the right conditions of both a **boar** (male) and **sow** (female)
- The male factors include
 - **ability to mate**
 - physical willingness
 - ability to produce normal sperm in adequate numbers
- The female factors include
 - the **anatomical** and **physiological** workings of the reproductive system must function properly

Female Reproduction Parts

- **Vulva**
- **Vagina**
- **Cervix**
- **Uterus**
- **Oviducts**
- **Ovaries**

Vulva:

- External genitalia of the female pig
- Often swells and changes **color** near the time of estrus

Vagina

- Approximately **12-18** inches long
- Connects the cervix to the external genitalia
- The passageway from the uterus to the outside of the reproduction tract.
- The bladder empties into the vagina on the floor of the vagina approximately two inches from external opening
- Houses the clitoris

Cervix

- Approximately 1 inch in diameter
- About 6-8 inches in length
- Connects the vagina and uterus
- Made of tough connective tissue
- Includes 5 interdigitating pads – these provide pressure points for locking of the penis
- Will dilate to accommodate the penis and for the birth canal

Uterus

- The uterine body is located at the junction of the two uterine horns
- Birth canal of the pig

Oviducts

- Oviducts are near the ovaries
- Oviducts receives the egg from the ovary at ovulation
- The lining of the oviducts propels the eggs to the horns of the uterus

Ovary

- Source for both reproductive hormones and eggs (ova)
- Follicles appear from hormones (FSH) and (LH) as small, blister-like structures that contain an egg
- Follicles become larger and will release the eggs (ovum) at estrus

Male Reproductive Parts

- Penis
- Urethra
- Vas Deferens
- Scrotum
- Epididymis
- Testes

Penis

- Final structure of transfer of sperm into the female
- Tough fibroelastic tissue supplied with blood and nerves
- Penis extends through an opening (prepuce) on the abdomen

Urethra

- Passes through the **center** of the penis
- Responsible for transport of both semen and urine
- Urine enters the urethra by relaxation of a muscle under voluntary control
- During erection and ejaculation relaxation of this muscle is prevented
- Prevents **urine** entering the **semen**

Vas Deferens

- Muscular tube that at **ejaculation** propels the sperm from the tail of the epididymis on the testes up through the inguinal canal and into the urethra
- Merge into a single tube to the **urethra**
- Moves sperm from the epididymis to the penis

Scrotum

- Where the testicles are located
- **Pouch** that helps to protect and regulate temperature
- Remains very close to the body

Epididymis

- Tightly adhered tube outside the testicles
- Highly **coiled** tube
- The sperm is stored and matures in this tube

Testes

- Produce **sperm** and hormones
- Testes are anatomically **upside down** compared to other species
- Sperm moves from the testes through the seminiferous tubules to the epididymis

Lesson Four – Swine Reproductive System

REVIEW: Recap of Reproductive System

10 minutes

Purpose:

Participants will review what they learned about the pig reproductive system.

Materials:

- *Pig Reproductive System* worksheet
- *Pig Reproductive System* worksheet – Answer Key
- Pig Reproduction Poster for reference

Facilitation Steps:

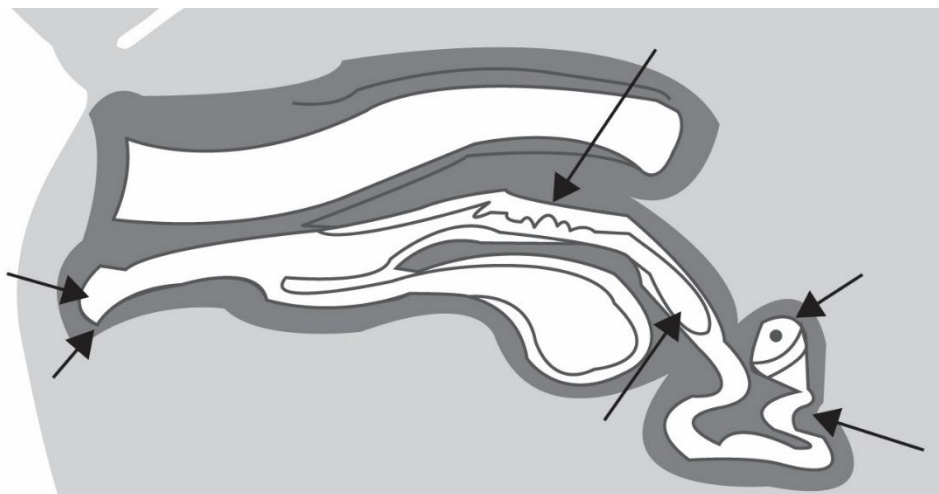
1. Distribute the *Pig Reproductive System* worksheet. Instruct participants on how to complete the worksheet.
2. Have participants complete the worksheet and hand in for correcting.
3. Correct using the *Pig Reproductive System* – Answer Key.

Name: _____ Class: _____

Pig Reproductive System Worksheet

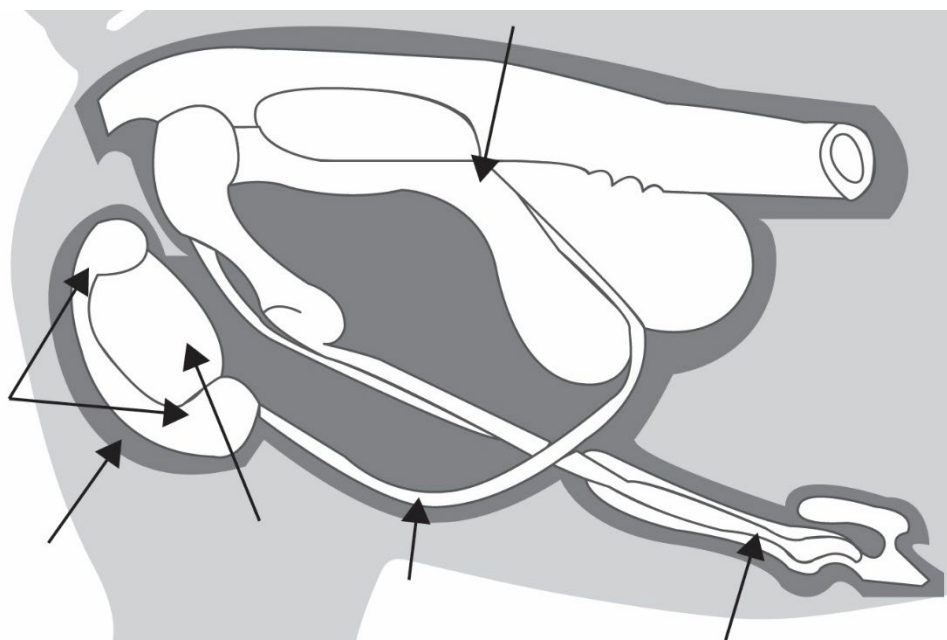
Match the female reproductive part with its corresponding name:

Ovaries
Oviducts
Uterus
Cervix
Vagina
Vulva



Match the male reproductive part with its corresponding name:

Testes
Epididymis
Scrotum
Vas deferens
Urethra
Penis



Swine

Fill in the blanks:

1. Connects the vagina and uterus: _____
2. Source of both reproductive hormones and eggs: _____
3. Birth canal of the pig: _____
4. Passageway from the uterus to the outside of the reproductive tract: _____
5. Produce sperm and hormones: _____
6. Pouch where testes are located: _____
7. Passageway in the center of the penis: _____
8. Final structure of transfer of sperm into female: _____

WORD BANK:

Ovary

Scrotum

Uterus

Cervix

Vagina

Testes

Penis

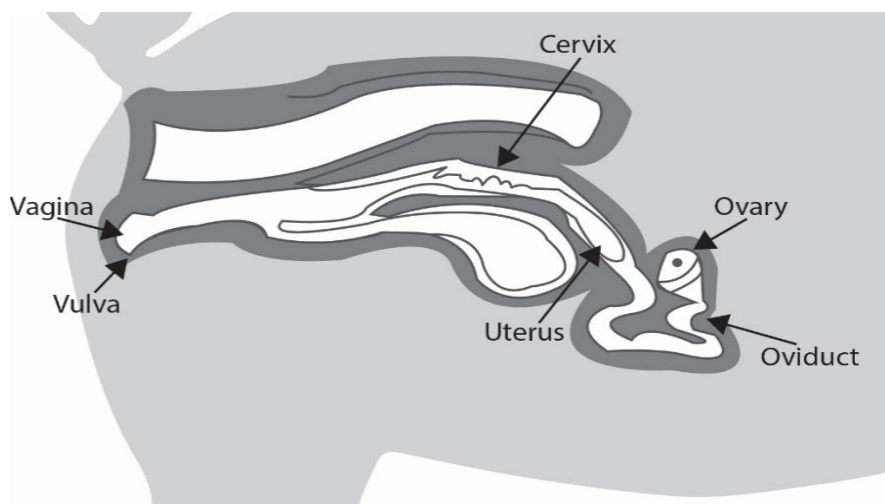
Urethra

Name: _____ Class: _____

Pig Reproductive System Worksheet - Answer Key

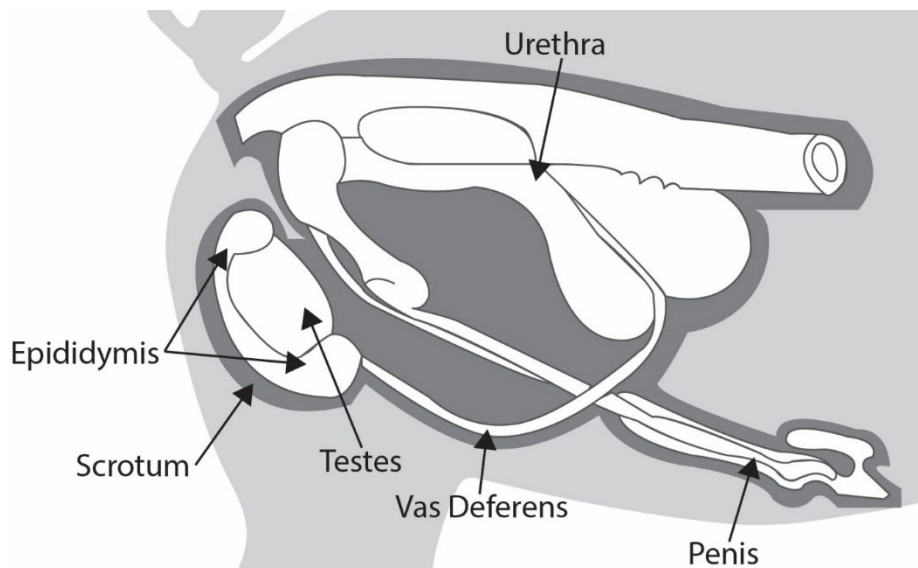
Match the female reproductive part with its corresponding name:

Ovary
Oviduct
Uterus
Cervix
Vagina
Vulva



Match the male reproductive part with its corresponding name:

Testes
Epididymis
Scrotum
Vas deferens
Urethra
Penis



Swine

Fill in the blanks:

1. Connects the vagina and uterus: Cervix
2. Source of both reproductive hormones and eggs: Ovary
3. Birth canal of the pig: Uterus
4. Passageway from the uterus to the outside of the reproductive tract: Vagina
5. Produce sperm and hormones: Testes
6. Pouch where testes are located: Scrotum
7. Passageway in the center of the penis: Urethra
8. Final structure of transfer of sperm into female: Penis

WORD BANK:

Ovary

Scrotum

Uterus

Cervix

Vagina

Testes

Penis

Urethra

Lesson Five – Swine Body Systems

Lesson Overview

Participants will learn the basic function of the skeletal, muscular, digestive, and endocrine systems of swine.

Lesson Objectives

After completing this lesson, participants will be able to:

- Explain the function of the skeletal system
- Define the difference between voluntary and involuntary muscles
- Describe the three types of muscles
- List in order the organs involved in the digestive system
- Define what the endocrine system does

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>How Many Bones Do I Have?</i> worksheet • <i>How Many Bones Do I Have?</i> – Answer Key	1. Print/photocopy <i>How many bones do I have?</i> (one per participant)	10 minutes
LEARN	• <i>Swine Body Systems</i> slide presentation • <i>What is Under the Pig Skin?</i> worksheet • <i>What is Under the Pig Skin?</i> – Answer Key	1. Print/photocopy <i>What is Under the Pig Skin?</i> (one per participant) 2. Prepare <i>Swine Body Systems</i> slide presentation for viewing	40 minutes
REVIEW	• Swine-Animal Whiteboards • <i>Swine Body Systems Quiz</i> • <i>Swine Body Systems Quiz</i> – Answer Key	1. Print/photocopy <i>Swine Body Systems Quiz</i> (one per participant)	10 minutes

Lesson Five – Swine Body Systems

FOCUS: Intro to Swine Body Systems

10 minutes

Purpose:

Participants will be introduced to the body systems of swine by being broken into groups to discover how many bones different animals contain in their body.

Materials:

- *How Many Bones Do I Have?* worksheet
- *How Many Bones Do I Have?* – Answer Key

Facilitation Steps:

1. Divide participants into pairs.
2. Pass out the worksheet prior to or at the beginning of class. Instruct participants on how to fill out the worksheet.
3. Give participants five minutes to complete the worksheet.
4. Have participants return to their seats and exchange papers.
5. Go over the answers to the worksheet.
6. Collect worksheets.

Name: _____ Class: _____

How Many Bones Do I Have?

Directions: Match the number of bones on the right with the correct animal on the left.

- | | | |
|----------------|-------|--------|
| 1. Human | _____ | A. 205 |
| 2. Goat | _____ | B. 216 |
| 3. Sheep | _____ | C. 230 |
| 4. Beef cattle | _____ | D. 110 |
| 5. Pig | _____ | E. 189 |
| 6. Horse | _____ | F. 206 |
| 7. Cat | _____ | G. 207 |
| 8. Dog | _____ | H. 319 |

How Many Bones Do I Have? – Answer Key

Directions: Match the number of bones on the right with the correct animal on the left.

1. Human	F	A. 205
2. Goat	E	B. 216
3. Sheep	D	C. 230
4. Beef cattle	G	D. 110
5. Pig	B	E. 189
6. Horse	A	F. 206
7. Cat	C	G. 207
8. Dog	H	H. 319

Lesson Five – Swine Body Systems

LEARN: Swine Body Systems

40 minutes

Purpose:

Participants will learn the basic purposes of the skeletal, muscular, digestive, and endocrine systems of swine.

Materials:

- *Swine Body Systems* slide presentation
- *What is Under the Pig Skin?* worksheet
- *What is Under the Pig Skin?* – Answer Key

Facilitation Steps:

1. Set up the *Swine Body Systems* slide presentation.
2. Hand out the *What is Under the Pig Skin?* Worksheet to participants prior to or at the beginning of class.
3. Present the slide presentation while participants take notes.

Slide 1: Title slide

Slide 2: What is Under that Pig Skin?

Slide 3: Skeletal System

- Made up of bones, cartilages, and ligaments
- Frame by which the pig's body is built on
- Swine have 216 bones

Slide 4: Function of Different Shaped Bones

The skeleton is made up of different shaped bones that serve a variety of purposes.

Long bones provide support like columns. This allows the animal to move.

Short bones are shaped like cubes. These cubes are found in joints, protecting the body from friction and impacts.

Flat bones protect organs of the animal. This includes the heart, lungs, and brain.

Slide 5: How are Bones Held Together?

The skeletal system is kept together in three ways.

Joints occur where two or more bones meet.

Ligaments are bands of connective tissue that keep bones together.

Tendons are thick bands that connect bone and muscle.

Slide 6: What Else Does the Skeletal System Do?

- Stores and releases minerals and fat
- Produces blood cells through bone marrow

Slide 7: Muscular System

Slide 8: Role of the Muscular System

- Muscles allow the body to move
- Muscles can be either voluntary or involuntary
 - Voluntary muscles are muscles such as those in your legs that allow you to walk
 - Involuntary muscles are those that are not controlled by the animal, like the muscles that make up the digestive system

Slide 9: Three Types of Muscles

- Smooth muscles are those found in the walls of internal organs and are involuntary.
- Cardiac muscles are those that make up the heart. These muscles are involuntary.
- Skeletal muscles are those attached to the bones and aid in movement.

Slide 10: Digestive System

Slide 11: What Does the Digestive System Do?

The digestive system breaks food down into small molecules so that the body can get nutrition from the food.

Slide 12: What are the Parts of the Digestive System?

- Digestive system consists of the:

- Mouth
- Tongue
- Pharynx
- Esophagus
- Stomach
- Small intestine
- Large intestine
- Anus

Slides 13-15: How does a Monogastric System Work?

- Monogastric system is one that consists of a simple double-chambered stomach
- Process begins by food being chewed and swallowed
- Food then enters a low-pH environment in the stomach
- While in the stomach, the protein is broken down
- From here, the food enters the small intestine where it breaks food down even more so that it can be absorbed
- Liver and pancreas produce enzymes that aid in the small intestine in digestion and nutrient absorption
- Food then goes through the large intestine where moisture from the feed is absorbed
- What is left in the large intestine then moves out of the system as feces

Slide 16: Endocrine System

Slide 17: What is the Endocrine System?

- Endocrine system is made up of glands that produce hormones
- Hormones are chemicals that control different types of bodily functions
- Four glands create this system

Slides 18-19: Glands

- Hypothalamus gland controls the pituitary gland and makes an antidiuretic hormone
- Pituitary gland makes amino acids and releases growth hormone
- Thyroid gland creates amino acids as well as encourages growth and metabolism
- Adrenal gland makes amino acids, releases epinephrine, and norepinephrine

What is Under the Pig Skin?

Directions: Fill in the blanks with the information from the slide presentation.

1. The _____ system is made up of _____, _____, and _____.
2. The skeletal system is the _____ by which the pig's body is built on.
3. Swine have _____ bones.
4. The skeleton is made up of several different _____ bones that serve many _____.
5. _____ bones provide support like _____. This allows the animal to _____.
6. _____ bones are shaped like _____. These cubes are found in _____ and protect the body from _____ and _____.
7. _____ bones _____ of the animal. This includes the heart, lungs, and brain.
8. The skeletal system is kept together in _____ ways.
9. _____ occur where _____ meet.
10. _____ are _____ of _____ that keep _____.
11. _____ are _____ that _____ and _____.
12. Skeletal system _____ and _____.
13. Skeletal system _____ and _____.
14. Skeletal system _____ through _____.
15. _____ allow the body to _____.
16. Muscles can be either _____ or _____.
17. _____ muscles are muscles such as those in your _____ that allow you to _____.
18. _____ muscles are those that are _____ by the _____, such as those that makeup the _____ system.
19. There are _____ types of muscles.
20. _____ muscles are those found in the _____ and are _____.
21. _____ muscles are those that makeup the _____. These muscles are _____.
22. _____ muscles are those _____ and _____.
23. The _____ system breaks food down into small molecules so that the body can get nutrition from the food.
24. The digestive system consists of the mouth, _____, pharynx, _____, stomach, _____, _____, _____, and anus.
25. A _____ system is one that consists of a simple _____.

26. The digestive process begins by food being _____ and _____.
27. This food then enters a _____ environment in the _____.
28. While in the _____, the _____ is _____.
29. From here, the food enters the _____ where it _____ even more so that it can be _____.
30. The _____ and _____ produces _____ that _____ in the _____ in _____ and _____ of _____.
31. Food then goes through the _____ intestine where moisture from the _____ is absorbed.
32. What is left in the large _____ then moves out of the _____ as feces.
33. The _____ system is made up of _____ that _____.
34. _____ are _____ that control _____.
35. There are _____ that create this system.
36. _____ gland _____ the _____ gland and makes an _____ hormone.
37. _____ gland _____, and _____.
38. _____ gland _____, _____ and _____.
39. _____ gland _____, _____ and _____.

What is Under the Pig Skin? – Answer Key

Directions: Fill in the blanks with the information from the slide presentation.

1. The **skeletal** system is made up of **bones**, **cartilages**, and **ligaments**.
2. The skeletal system is the **frame** by which the pig's body is built on.
3. Swine have **216** bones.
4. The skeleton is made up of several different **shaped** bones that serve a variety of **purposes**.
5. **Long** bones provide support like **columns**. This allows the animal to **move**.
6. **Short** bones are shaped like **cubes**. These cubes are found in **joints** and protect the body from **friction** and **impacts**.
7. **Flat** bones **protect organs** of the animal. This includes the heart, lungs, and brain.
8. The skeletal system is kept together in **three** ways.
9. **Joints** occur where **two or more bones** meet.
10. **Ligaments** are **bands** of **connective tissue** that keep **bones together**.
11. **Tendons** are **thick bands** that **connect bone** and **muscle**.
12. Skeletal system **stores** and **releases minerals**.
13. Skeletal system **stores** and **releases fat**.
14. Skeletal system **produces blood cells** through **bone marrow**.
15. **Muscles** allow the body to **move**.
16. Muscles can be either **voluntary** or **involuntary**.
17. **Voluntary** muscles are muscles such as those in your **legs** that allow you to **walk**.
18. **Involuntary** muscles are those that are **not controlled** by the **animal**, like the muscles that makeup the **digestive** system.
19. There are **three** types of muscles.
20. **Smooth** muscles are those found in the walls of **internal organs** and are **involuntary**.
21. **Cardiac** muscles are those that makeup the **heart**. These muscles are **involuntary**.
22. **Skeletal** muscles are those **attached to the bone** and **aid in movement**.
23. The **digestive** system breaks food down into small molecules so that the body can get nutrition from the food.
24. The digestive system consists of the mouth, **tongue**, pharynx, **esophagus**, stomach, **small intestine**, **large intestine**, and anus.
25. A **monogastric** system is one that consists of a simple **double-chambered stomach**.
26. The digestive process begins by food being **chewed**, and **swallowed**.

27. This food then enters a low-pH environment in the stomach.
28. While in the stomach, the protein is broken down.
29. From here, the food enters the small intestine where it breaks food down even more so that it can be absorbed.
30. The liver and pancreas produces enzymes that aid in the small intestine in digestion and absorption of nutrients.
31. Food then goes through the large intestine where moisture from the feed is absorbed
32. What is left in the large intestine then moves out of the system as feces
33. The endocrine system is made up of glands that produce hormones.
34. Hormones are chemicals that control different types of bodily functions.
35. There are four glands that create this system.
36. Hypothalamus gland controls the pituitary gland and makes an antidiurectic hormone.
37. Pituitary gland makes amino acids and releases growth hormone.
38. Thyroid gland creates amino acids as well as encourages growth and metabolism.
39. Adrenal gland makes amino acid as well as releases epinephrine and norepinephrine.

Lesson Five – Swine Body Systems

REVIEW: Swine Body Systems Review

10 minutes

Purpose:

Participants will review the content in groups, using whiteboards to prepare for a quiz.

Materials:

- Swine-Animal whiteboards
- *Swine Body Systems Quiz*
- *Swine Body Systems Quiz – Answer Key*

Facilitation Steps:

1. Divide the participants into pairs.
2. Pass out the whiteboards and provide instruction on how to use them.
3. After five minutes, collect the whiteboards and send participants back to their seats.
4. Pass out the quiz.
5. Allow five minutes for participants to take the quiz.
6. Collect quizzes.

Name: _____ Class: _____

Swine Body Systems Quiz

Directions: Circle the correct answer.

1. The skeletal system consists of bones, hormones, and glands. True or False
2. Swine have 100 bones. True or False
3. There are four different shapes of bones. True or False
4. Long bones protect the swine's body from friction and impact. True or False
5. Short bones allow the animal to move. True or False
6. Flat bones protect the organs. True or False
7. Joints occur where two or more bones meet. True or False
8. Ligaments are thick bands that connect bone and muscle. True or False
9. Tendons are bands of connective tissue that keep bones together. True or False
10. The skeletal system also releases minerals and fat. True or False
11. Muscles can be broken down into categories that describe how they are controlled. This includes voluntary, involuntary, and stationary types. True or False
12. Cardiac muscles make up the heart. True or False
13. Smooth muscle covers the inside of the internal organs. True or False
14. Five glands make up the endocrine system. True or False
15. The glands of the endocrine system produce hormones. True or False

16. Using the organs listed, put the digestive tract in order.

Stomach, small intestine, large intestine, mouth, tongue, anus, pharynx, esophagus

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Swine Body Systems Quiz – Answer Key

Directions: Circle the correct answer.

1. The skeletal system consists of bones, hormones, and glands. True or **False**
2. Swine have 100 bones. True or **False**
3. There are four different shapes of bones. True or **False**
4. Long bones protect the swine's body from friction and impact. True or **False**
5. Short bones allow the animal to move. True or **False**
6. Flat bones protect the organs. **True** or False
7. Joints occur where two or more bones meet. **True** or False
8. Ligaments are thick bands that connect bone and muscle. True or **False**
9. Tendons are bands of connective tissue that keep bones together. True or **False**
10. The skeletal system also releases minerals and fat. **True** or False
11. Muscles can be broken down into categories that describe how they are controlled. This includes voluntary, involuntary, and stationary types. True or **False**
12. Cardiac muscle makes up the heart. **True** or False
13. Smooth muscle covers the inside of the internal organs. **True** or False
14. Five glands make up the endocrine system. True or **False**
15. The glands of the endocrine system produce hormones. **True** or False

16. Using the organs listed, put in order the digestive tract.

Stomach, small intestine, large intestine, mouth, tongue, anus, pharynx, esophagus

1. **Mouth**
2. **Tongue**
3. **Pharynx**
4. **Esophagus**
5. **Stomach**
6. **Small intestine**
7. **Large intestine**
8. **Anus**

Lesson Six – Selection and Judging of Swine

Lesson Overview

Participants will learn the importance of proper selection of swine and the basic principles and terminology used in swine judging.

Lesson Objectives

After completing this lesson, participants will be able to:

- Explain the difference between the two forms of judging
- List the three angles by which the animal should be viewed during judging
- List the six characteristics that are judged
- List two desirable traits for each characteristic
- List two desirable traits that individuals look for in breeding stock
- Explain the importance of proper animal selection

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Intro to Judging Terms</i> worksheet • <i>Intro to Judging Terms</i> – Answer Key	1. Print/photocopy <i>Intro to Judging Terms</i> (one per participant)	10 minutes
LEARN	• <i>Selection and Judging of Swine</i> slide presentation • <i>What to Look for in Swine</i> worksheet • <i>What to Look for in Swine</i> – Answer Key	1. Print/photocopy <i>What to Look for in Swine</i> (one per participant) 2. Prepare <i>Selection and Judging of Swine</i> slide presentation for viewing	40 minutes
REVIEW	• <i>Selection and Judging of Swine Quiz</i> • <i>Selection and Judging of Swine Quiz</i> – Answer Key	1. Print/photocopy <i>Selection and Judging of Swine Quiz</i> (one per participant)	10 minutes

Lesson Six – Selection and Judging of Swine

FOCUS: Intro to Selection and Judging of Swine

10 minutes

Purpose:

Participants will break into pairs to solve the scrambled swine judging terms.

Materials:

- *Intro to Judging Terms* worksheet
- *Intro to Judging Terms* – Answer Key

Facilitation Steps:

1. Divide participants into pairs.
2. Pass out worksheet prior to or at the beginning of class. Instruct participants on how to fill out the worksheet.
3. Give the participants five minutes to complete the worksheet.
4. Have participants return to their seats and exchange papers.
5. Go over the correct answers.
6. Collect worksheets.

Name: _____ Class: _____

Intro to Judging Terms

Directions: Unscramble the words on the right and place the answer in the blank on the left

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

rofmanconit
celanba
uscmle
shinif
zies dan caels
uretcrust

Intro to Judging Terms – Answer Key

Directions: Unscramble the words on the right and place the answer in the blank on the left.

1. _____ **conformation** _____
2. _____ **balance** _____
3. _____ **muscle** _____
4. _____ **finish** _____
5. _____ **size and scale** _____
6. _____ **structure** _____

rofmanoonit
celanba
uscmle
shinif
zies dan caels
uretrcst

Lesson Six – Selection and Judging of Swine

LEARN: How to Judge Swine

40 minutes

Purpose:

Participants will learn the basics on how to judge swine.

Materials:

- *Selection and Judging of Swine* slide presentation
- *What to Look for in Swine* worksheet
- *What to Look for in Swine* – Answer Key

Facilitation Steps:

1. Set up the slide presentation.
2. Pass out the worksheet and provide instruction on how to fill it out.
3. Present the slide presentation while participants take notes.

Slide 1: Title slide

Slide 2: Hey Friend, Did You Know that Judging is Hard Work?

Slides 3-5: What are the Two Ways Swine can be Judged?

- One form of judging is where both the animal and the owner are judged. The goal is for the owner to show off the most positive aspects of the animal.
- In this form of judging, the animal is moved around in the show ring with other competitors doing the same thing
- Beyond showing off the positive aspect of one's animal, it is also beneficial to spend as much time in front of the judge, who is outside the ring most of the time
- This is why the swine are constantly moved around the ring, fighting for the attention of the judge
- The second type is what we are going to concentrate on. This form of judging consists of an individual viewing four hogs and ranking them according to their physical characteristics.

- The presentation of the judge is considered or how one defends their ranking of the four swine.

Slide 6: Two Types of Swine Judged

- Both market and breeding stock are judged
- What is looked for during the judging process is the same for market and breeding stock

Slides 7-8: How to Start Judging

- Unlike other animal judging where the animal is kept still, swine are placed in a pen with a number sprayed on their back and allowed to move as they like
- You will need to start your observation noting the number on your judging card and then note characteristics of the animal
- During this stage, the goal is not to compare the animals
- Instead, observe one animal at a time while taking notes on that animal

Slide 9: Judging with a View

- When it comes to judging swine, you must get a view of the animal from three sides
- These three sides are the front, side, and back

Slide 10: What to Look for in a Front View

- Trimness of the neck and jowl
- Width and depth of chest
- Correctness of front feet and legs
- Degree of finish or fat cover over the top
- Breed character

Slide 11: What to Look for in a Side View

- Conformation and general balance
- Degree of muscling and fat
- Length and depth of side
- Levelness of topline
- Trimness of jowl
- Trimness of underline
- Straightness of legs
- Strength of pasterns

- Quality of head, hide, hair, and bone

Slide 12: What to Look for in Rear View

- Set of tail
- Muscle pattern in the ham
- Correctness of the rear feet and legs
- Strength of pasterns
- Levelness of topline

Slides 13-14: Judging for the Use

- While both market hogs and breeding stock are judged with the same criteria, their use is considered
- Example: Market hogs should be around 220 to 250 pounds depending on breed and a good ratio of muscle to fat for meat production
- On the other hand, breeding stock needs to be strong enough for successful breeding. Characteristics that would be important would be strong legs and a long body.

Slide 15: What does a Judging Card Look Like?

Slide 16: Six Characteristics to Judge

- Conformation
- Balance
- Muscle
- Finish
- Size and Scale
- Structure

Slide 17: Conformation Terms

Slide 18: Balance Terms

Slide 19: Muscle Terms

Slide 20: Finish Terms

Slide 21: Size and Scale

Slide 22: Structure

Slide 23: Judging for Breeding

- While judging for breeding does not have its own category, there are a few characteristics that one needs to look at

Slide 24: Reproductive Traits

Slide 25: Why is it Important to Select the Right Animal?

- Poor selection can be very costly
- If selecting a piglet to raise for meat production, one needs to make sure that the structure or body of the piglet is sound and has the potential of producing a lot of meat

Slide 26: Importance of Proper Market Selection Continued

- On the other hand, selecting a hog that is too thin will cost the farmer more money in feed to try to fatten up
- A hog that is too large has the potential to produce more fat, which the consumer does not like
- This also means a loss in profits

Slide 27: Importance of Proper Breeding Stock Selection

- Improper selection of breeding stock will be a financial drain on the farmer due to loss of piglets, production of unhealthy piglets, possibly loss of sows, and the extra cost of rebreeding due to loss of piglets
- Additional costs for the farmer also include the cost of time, feed and veterinary bills

What to Look for in Swine

Directions: As you watch the slide presentation, fill in the blanks below.

1. _____ form of judging is where both the _____ and the _____ are judged. The _____ is for the owner to _____ the most _____ of the animal.
2. In this form of judging, the _____ in the _____ with other competitors doing the same thing.
3. Beyond showing off the positive aspect of one's animal, it is also beneficial to spend as much time in front of the _____, which most of the time is _____.
4. This is why the _____ are _____ around the ring _____ of the _____.
5. The _____ is what we are going to concentrate on. This form of judging consists of an _____ and _____ them according to their _____.
6. The _____ of the _____ is what is considered or _____ their _____ of the four swine.
7. _____ and _____ are _____.
8. What is looked for during the _____ is the _____ for _____.
9. Unlike other animal judging where the animal is kept still, _____ are _____ with a _____ and _____ as they like.
10. You will need to _____ your _____ on your judging card and then note _____ of the animal.
11. During this stage the _____. Instead, _____ while _____.
12. When it comes to _____, you must get a _____.
13. These _____ are the _____.
14. What to look for in the _____ are _____ of the _____ and _____, _____ and _____, _____ of _____, _____ of finish or _____, and breed _____.
15. What to look for in the _____ are _____, degree of _____, length and _____, levelness of _____, _____ of _____, trimness of _____, _____ of legs, strength of _____, and _____.
16. What to look for in _____ are _____, muscle _____, _____ of the _____ and _____, _____, and _____.
17. While both _____ and _____ are judged with the same criteria, their _____.
18. Example: _____ should be around 220 to 250 pounds depending on breed and a _____ for meat production.
19. On the other hand, _____ needs to be strong enough for successful breeding. _____ that would be important would be _____.

Swine

20. Label the judging card.

21. Six characteristics to judge include _____, balance, _____, finish, _____, and structure.

22. Conformation Terms.

General	Desirable	Negative

23. Balance.

General	Desirable	Negative

24. Muscle.

General	Desirable	Negative

Swine

25. Finish.

General	Desirable	Negative

26. Size and scale.

General	Desirable	Negative

27. Structure.

General	Desirable	Negative

28. Reproductive traits.

General	Desirable	Negative

Swine

29. _____ can be _____.
30. If selecting a _____ to _____, one needs to make sure that the structure or ____ of the piglet _____ and has the _____.
31. On the other hand, selecting a ____ that is ____ _____ will _____ the farmer _____ to try to _____.
32. A _____ that is _____ has the _____, which the _____.
33. This also means a _____.
34. _____ will be a _____ on the farmer due to _____, production of unhealthy piglets, _____, and the extra _____ due to loss of piglets.
35. _____ for the farmer also include the cost of _____.

What to Look for in Swine – Answer Key

Directions: As you watch the slide presentation, fill in the blanks below.

1. One form of judging is where both the animal and the owner are judged. The goal is for the owner to show off the most positive aspects of the animal.
2. In this form of judging, the animal is moved around in the show ring with other competitors doing the same thing.
3. Beyond showing off the positive aspect of one's animal, it is also beneficial to spend as much time in front of the judge, which most of the time is outside the ring.
4. This is why the swine are constantly moved around the ring fighting for the attention of the judge.
5. The second type is what we are going to concentrate on. This form of judging consists of an individual viewing four hogs and ranking them according to their physical characteristics.
6. The presentation of the judge is what is considered or how one defends their ranking of the four swine.
7. Both market and breeding stock are judged.
8. What is looked for during the judging process is the same for market and breeding stock.
9. Unlike other animal judging where the animal is kept still, swine are placed in a pen with a number sprayed on their back and allowed to move as they like.
10. You will need to start your observation noting the number on your judging card and then note characteristics of the animal.
11. During this stage the goal is not to compare the animals. Instead, observe one animal at a time while taking notes on that animal.
12. When it comes to judging swine, you must get a view of the animal from three sides.
13. These three sides are the front, side, and back.
14. What to look for in the front view are trimness of the neck and jowl, width and depth of chest, correctness of front feet and legs, degree of finish or fat cover over the top, and breed character.
15. What to look for in the side view are conformation and general balance, degree of muscling and fat, length and depth of side, levelness of topline, trimness of jowl, trimness of underline, straightness of legs, strength of pasterns, and quality of head, hide, hair, and bone.
16. What to look for in rear view are set of tail, muscle pattern in the ham, correctness of the rear feet and legs, strength of pasterns, and levelness of topline.
17. While both market hogs and breeding stock are judged with the same criteria, their use is considered.
18. Example: Market hogs should be around 220 to 250 pounds depending on breed and a good ratio of muscle to fat for meat production.
19. On the other hand, breeding stock needs to be strong enough for successful breeding. Characteristics that would be important would be strong legs and a long body.

Swine

20. Label the judging card

Id number	Good	Bad	Compare

21. Six characteristics to judge include **conformation**, balance, **muscle**, finish, **size and scale**, and structure

22. Conformation Terms

General	Desirable	Negative
short	Medium tall in height	Too tall
Average body length	Long in body length	Short body length
Average body width	Wide body	Narrow body

23. Balance

General	Desirable	Negative
Light tightness in the middle	Tight in the middle	Heavy in the middle
Slightly out of proportion	Neck and shoulders in proportion with the rest of the body	Long neck and other body parts out of proportion
Average rump length	Long in the rump	Short in the rump

24. Muscle

General	Desirable	Negative
Thicker made	Larger and smoother muscle pattern	Narrow topped
Meatier	More natural thickness	Light muscle
Looser muscle	Wider top and squarer top	Narrower tracking

Swine

25. Finish

General	Desirable	Negative
Higher yielding	Less trimmable waste	Lighter weight
Average percentage lean cuts	Greater percentage lean cuts	Fatter
Average cutability	More pounds of red meat	Lowest cutability

26. Size and scale

General	Desirable	Negative
Growthier	Longer body and longer loin	Shorter bodied
Average rumped	Longer rumped	Shorter rumped
Average weight per day of age	More weight per day of age	Less weight per day of age

27. Structure

General	Desirable	Negative
Structurally correct	Longer striding	Restricted striding
Structurely sound	Wider tracking	Short striding
Average uniformity of toe length	More uniform length of toe	Uneven toe length

28. Reproductive traits

General	Desirable	Negative
Higher volume	More production oriented	Less volume
More durable	Stronger featured	Frail made
Average ribbed and average body	Deeper ribbed and deeper bodied	Light ribbed and shallow body

29. Poor selection can be very costly.
30. If selecting a piglet to raise for meat production, one needs to make sure that the structure or body of the piglet is sound and has the potential of producing a lot of meat.
31. On the other hand, selecting a hog that is too thin will cost the farmer more money in feed to try to fatten up.
32. A hog that is too large has the potential to produce more fat, which the consumer does not like.
33. This also means a loss in profits.
34. Improper selection of breeding stock will be a financial drain on the farmer due to loss piglets, production of unhealthy piglets, possibly loss of sows, and the extra cost of rebreeding due to loss of piglets.
35. Additional costs for the farmer also include the cost of time, feed, and veterinary bills.

Lesson Six – Selection and Judging of Swine

REVIEW: Recap of Selection and Judging of Swine

10 minutes

Purpose:

Participants will take a quiz on swine judging.

Materials:

- *Selection and Judging of Swine Quiz*
- *Selection and Judging Quiz – Answer Key*

Facilitation Steps:

1. Hand out the quiz.
2. Give participants five minutes to complete the quiz.
3. Collect quizzes.

Name: _____ Class: _____

Selection and Judging of Swine Quiz

Directions: For each statement, circle True or False.

1. Market hogs and breeding stock are judged differently. True or False
2. Poor selection of hogs will save the farmer money. True or False
3. The judging number of the hog is located on the back. True or False
4. When judging hogs, only six animals are judged at a time. True or False
5. In today's market, a hog that has a lot of fat is valued over a hog with a lot of muscle. True or False
6. The first step of judging is to compare all the hogs together. True or False
7. When looking at the pig from the front, one should note whether the legs are fatty. True or False
8. The width and depth of the chest is not important. True or False
9. When looking at the hog from the side, the quality of head, hide, hair, and bone should not be considered. True or False
10. A hog that has balanced proportion is a valued characteristic. True or False
11. When looking at the back of the hog, one should not concern themselves with the set of the tail. True or False
12. How much muscle appears in the ham region of the hog is unimportant. True or False

For each judging characteristic, provide two desirable traits using judging terms

1. Conformation _____ and _____
2. Balance _____ and _____
3. Muscle _____ and _____
4. Finish _____ and _____
5. Size and scale _____ and _____
6. Structure _____ and _____

Using judging terms, list two desirable traits for looking at hogs for breeding purposes.

1. _____
2. _____

Selection and Judging of Swine Quiz – Answer Key

Directions: For each statement, circle True or False.

1. Market hogs and breeding stock are judged differently. True or **False**
2. Poor selection of hogs will save the farmer money. True or **False**
3. The judging number of the hog is located on the back. **True** or False
4. When judging hogs, only six animals are judged at a time. True or **False**
5. In today's market, a hog that has a lot of fat is valued over a hog with a lot of muscle. True or **False**
6. The first step of judging is to compare all the hogs together. True or **False**
7. When looking at the pig from the front, one should note whether the legs are fatty. True or **False**
8. The width and depth of the chest is not important. True or **False**
9. When looking at the hog from the side, the quality of head, hide, hair, and bone should not be considered. True or **False**
10. A hog that has balanced proportion is a valued characteristic. **True** or False
11. When looking at the back of the hog, one should not concern themselves with the set of the tail. True or **False**
12. How much muscle appears in the ham region of the hog is unimportant. **True** or False

For each judging characteristic, provide two desirable traits using judging terms.

1. Conformation **medium tall in height, long in body length, or wide body**
2. Balance **tight in the middle, neck and shoulders in proportion with the rest of the body or long in the rump**
3. Muscle **larger and smoother muscle pattern, more natural thickness, or wider top and squarer top**
4. Finish **less trimmable waste, greater percentage lean cuts, or more pounds of red meat**
5. Size and scale **longer body and longer loin, longer rumped, or more weight per day of age**
6. Structure **longer striding, wider tracking, or more uniform length of toe**

Using judging terms, list two desirable traits for looking at hogs for breeding purposes.

1. **More production oriented**
2. **Stronger featured or deeper ribbed and deeper bodied**

Lesson Seven – Marketing, Careers, and Training

Lesson Overview

Participants will explore careers in the swine production industry.

Lesson Objectives

After completing this lesson, participants will be able to:

- List five careers in swine production
- Describe the role that each of the five careers mentioned previously does in swine production
- List three tasks that each of the five careers is responsible for

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Careers in Swine Scramble</i> worksheet • <i>Careers in Swine Scramble – Answer Key</i>	1. Print/photocopy <i>Careers in Swine Scramble</i> (one per participant)	10 minutes
LEARN	• <i>Marketing, Careers, and Training</i> slide presentation • <i>Careers in Swine Production</i> worksheet • <i>Careers in Swine Production – Answer Key</i>	1. Print/photocopy <i>Careers in Swine Production</i> (one per participant) 2. Prepare <i>Marketing, Careers, and Training</i> slide presentation for viewing	40 minutes
REVIEW	• <i>Career Exploration Graphic Organizer</i> worksheet • <i>Careers in Swine Production Quiz</i> • <i>Careers in Swine Production Quiz – Answer Key</i>	1. Print/photocopy <i>Careers in Swine Production Quiz</i> (one per participant) 2. Print/photocopy <i>Career Exploration Graphic Organizer</i> (one per participant)	10 minutes

Lesson Seven – Marketing, Careers, and Training

FOCUS: Intro to Careers with Swine

10 minutes

Purpose:

Participants will be introduced to careers in the swine industry by completing a word scramble.

Materials:

- *Careers in Swine Scramble* worksheet
- *Career in Swine Scramble – Answer Key*

Facilitation Steps:

1. Hand out the worksheet prior to or at the beginning of class. Instruct participants on how to complete the worksheet.
2. Give participants five minutes to complete the worksheet.
3. Have participants exchange papers.
4. Go over the correct answers.
6. Collect the worksheets.

Name: _____ Class: _____

Careers in Swine Scramble

Directions: Uncover the different careers in swine by unmixing the letters on the right to fill in the blanks on the left.

- | | |
|-----------|------------------------|
| 1. _____ | A. wso ganamer |
| 2. _____ | B. inarianveter |
| 3. _____ | C. eedbring germana |
| 4. _____ | D. tchuber |
| 5. _____ | E. eedg lilm anamgre |
| 6. _____ | F. manuh tritionnuist |
| 7. _____ | G. lacitecamrahp assle |
| 8. _____ | H. maalin rainter |
| 9. _____ | I. obar duts geranam |
| 10. _____ | J. teenxions negat |

Careers in Swine Scramble – Answer Key

Directions: Uncover the different careers in swine by unmixing the letters on the right to fill in the blanks on the left.

- | | |
|-------------------------|------------------------|
| 1. Sow Manager | A. wso ganamer |
| 2. Veterinarian | B. inarianveter |
| 3. Breeding Manager | C. eedbring germana |
| 4. Butcher | D. tchuber |
| 5. Feed Mill Manager | E. eedg lilm anamgre |
| 6. Human Nutritionist | F. manuh tritionnuist |
| 7. Pharmaceutical Sales | G. lacitecamrahp assle |
| 8. Animal Trainer | H. maalin rainter |
| 9. Boar Stud Manager | I. obar duts geranam |
| 10. Extension Agent | J. teenxions nega |

Lesson Seven – Marketing, Careers, and Training

LEARN: Careers in Swine Production

40 minutes

Purpose:

Participants will learn about careers in swine production.

Materials

- *Careers in Swine Production* worksheet
- *Marketing, Careers, and Training* slide presentation
- *Careers in Swine Production* – Answer Key

Facilitation Steps:

1. Set up the slide presentation.
2. Hand out the worksheet prior to or at the beginning of class.
3. Present the slide presentation while participants take notes.

Slide 1: Title Slide

Slide 2: Careers in Swine Production

- While each career has its own responsibilities, keep in mind that many jobs overlap. When working with animals, everyone is involved in keeping the area clean and the animals safe. Can you think of an example of overlapping responsibilities?

Example: Parents are both responsible for taking care of their children.

Slides 3-6: Quality Control Inspector

- This career is divided into three segments
- The first covers the farm
- This person is looking for proper sanitation practices that prevent disease
- The second covers the slaughterhouse
- In the slaughterhouse, there are several quality factors to examine
- One inspector will ensure the slaughterhouse is kept clean and disease-free
- A second inspector will examine the carcass for its water-holding ability which producers prefer because it will hold a cure better

- The third type of quality control inspector examines the carcass and cuts to ensure that the consumer will be pleased
- They look for the amount of fat in the meat and the color of the pork, which consumers want a uniform reddish-pink.

Slides 7-8: Barn Manager

- The most important job of a barn manager is the proper care and maintenance of swine
- Barn manager tasks include:
 - Arranging schedules for other employees
 - Scheduling veterinarian visits, feedings, addition of supplements, and medications
 - Ordering supplies
 - Helping keep the barn clean

Slides 9-11: Sow Manager

- Helps with:
 - Sow breeding
 - Gestation
 - Pig farrowing
- Keeps accurate breeding records
- Ensures the environment is safe for both swine and staff
- Works with the veterinarian to keep sows and piglets healthy
- Keeps accurate records of:
 - Vaccinations
 - Illnesses
 - Medications
- Ensures the barn area is clean and free of disease and pests

Slides 12-14: Boar Stud Manager

- Works with veterinarian to maintain boars
- Keeps records of boar movement in and out of stud
- Orders and maintains equipment as well as supplies required for boar stud management
- Keeps precise records of:
 - Vaccinations

Swine

- Illnesses
 - Medications
- Ensures the barn is clean and free of disease and pests
- Keeps the barn safe for animals and employees

Slides 15-18: Breeding Manager

- Oversees the welfare of all swine
- Ensures the room is ready for the sow
- Makes sure all animals have feed and water
- Aids mother animals during birth
- Helps with C-sections if needed
- Makes sure both the mother and babies have their vaccinations
- Ensures nursery procedures are done correctly and wounds are treated
- Trains and supervises breeding staff
- Manages weaning
- Manages barn cleaning to ensure the health of swine and reduce disease/pest problems
- Makes sure proper ventilation is present and assigns heat lamps when needed
- Manages the need to euthanize mother or baby

Slides 19-21: Geneticist

- Creates a selective breeding program
- Studies and evaluates pedigrees
- Carries out genetic research and/or lab tests
- Develops techniques to improve heredity of desirable traits
- Reports and communicates genetic trends
- Studies population genetics
- Maps the genomes of various species

Slides 22-24: A.I. Technician

- Provides A.I. services to clients
- Ensures the area is properly sanitized
- Offers reproduction consultations to farmers and breeders
- Treats animals with care and respect
- Keeps accurate records of inseminations
- Supervises and aids with heat detection
- Administers vaccinations
- Carries out pregnancy checks on animals
- Introduces current and new products/services to farmers and breeders
- Stores, transports, thaws, and prepares semen for insemination

Slides 25-27: Veterinarian

- Examines animals
- Diagnoses diseases and pests
- Treats wounds
- Performs surgery on animals
- Puts animals down when needed
- Prescribes medication
- Advises animal owners on proper:
 - Housing
 - Feeding
 - General health practices
- Enforces government food safety rules
- Conducts research to improve animal health and well-being
- Develops programs that reduce transmission of disease from animal to animal and animal to human

Slides 28-30: Pharmaceutical Lab Technician

- Prepares samples and specimens
- Makes and operates standard lab equipment
- Performs lab tests
- Uses computers to do complex mathematical calculations and prepare graphs
- Ensures the lab is clean and stocked
- Keeps up to date on new techniques and technology in the field
- Conducts research
- Demonstrates the ability to do basic lab procedures
- Records and presents results from lab

Slides 31-33: Extension

Agent/Educator/Specialist

- Travels throughout the county they serve providing education on agricultural topics to farmers and breeders
- Creates classes for farmers to take
- Keeps up to date on advances in agriculture and passes this on to farmers/breeders
- Helps farmers become certified in certain programs
- Aids in county fair production
- Works with the young farmers program in promoting agriculture as a career

Slides 34-35: Pork Checkoff Communications Specialist

- Manages social media channels

Swine

- Creates newsletters
- Copywrites
- Creates digital content
- Creates podcasts
- Manages communication calendar
- Pitches article ideas to the media
- Writes and edits press releases

Slides 36-38: Pork Checkoff Industry Relations Specialist

- Promotes new pork products to chefs, consumers, and suppliers
- Determines what the consumer is thinking, seeing, hearing, searching, feeling, saying, buying, and eating
- Creates a plan to work with the information the consumer is receiving
- Builds trust in animal welfare
- Promotes product food safety
- Showcases product health benefits
- Creates a transparent approach to swine production

Slides 39-41: Human Nutritionist

- Has attention to detail as well as good research and analysis skills
- Prepares and analyzes new dishes for dietary breakdown
- Improves on new recipes and/or products
- Has excellent written and verbal communication
- Creates diets with certain requirements in mind
- Works with the industry to create products that promote a healthy lifestyle
- Understands food science and how food affects the human body

Slides 42-44: Swine Nutritionist

- Creates different feeds to meet the needs of different stages of swine production
- Keeps up to date on consumer preference for swine and adjusts feed accordingly
- Updates feed formulations according to new foodstuffs available to swine
- Tests the effect of new feed formulas on swine production, which includes meat to fat ratio, and taste
- Works with veterinarian to make sure the swine dietary needs are met

Slides 45-47: Feed Sales

- Stays up to date on the products their company sells
- Visits customers, which can include farms, retail stores, feed stores, and hardware stores
- Provides training at retail stores on new products
- Keeps up to date on trends in the feed industry and livestock production
- Looks for new clients in the territory they cover
- Provides support to clients
- Only deals with what the swine eat

Slides 48-50: Pharmaceutical Sales

- Only deals with medications used on swine
- Constantly looks for new clients for the company's products
- Keeps up to date on the swine industry and new/old medications that are available
- Visits retail stores, farms, and hardware stores to promote their products
- Visits veterinarians to promote new products and replenish current stock

Slides 51-53: Territory Sales Manager

- Works with and trains sales representatives in your territory
- Keeps up to date on trends in swine production
- Keeps up to date on new company products
- Sets territory sales goals and strategy on how to achieve them
- Helps build and maintain good relationships with customers
- Monitors sales and adjusts goals/strategy accordingly
- Works in both feed and pharmaceutical sales

Slides 54-56: Feed Mill Manager

- Examines production records
- Schedules feed production
- Orders and keeps an inventory of feed ingredients
- Tests for quality of feed
- Sets schedules for employees
- Trains employees on safety measures
- Ensures safety measures are followed
- Prepares monthly, quarterly, and yearly budgets

Swine

- Handles customer questions and complaints
- Keeps up to date on new techniques and equipment used in feed mills

Slides 57-58: Animal Trainer

- Evaluates skills required for the pig's task
- Familiarizes pig with human voices and contact
- Teaches pig to respond to commands
- Cares for pig while training and performing
- Ensures procedures/stunts follow safety protocol
- Transports pig to the job

Slides 59-61: Butcher/Artisan Butcher

- Ensures the work environment follows board of health protocol
- Keeps record of product coming in
- Properly stores meat for cutting
- Cuts meat into standard and specialty cuts
- Makes sausage/cures meat

- Keeps up to date with consumer trends
- Offers advice on how to prepare a certain cut of meat
- Butchers can work in a grocery store or meat processing plant
- Artisan butchers own or work at a butcher/specialty shop

Careers in Swine Production

Directions: Fill in the blanks with the information on the slide presentation.

1. Quality Control Inspector

This career is divided into _____.

_____ covers the _____.

This _____ is looking for _____
_____ that prevent disease.

_____ covers the _____.

In the slaughterhouse, there are _____ to examine.

One inspector will _____ the _____ is kept clean and free of disease.

A _____ inspector will _____ for its water-holding ability which producers prefer because it will hold a cure better.

The third type of quality control inspector _____ the carcass and _____ the ensure the consumer will be pleased.

They look for the amount of _____ in the meat and the _____ of the pork, which consumers want a uniform reddish-pink color.

2. Barn Manager

The most _____ of a barn manager is the _____
_____ and _____ of swine.

Barn manager tasks include _____ schedules for other _____; scheduling veterinarian visits, _____, addition of supplements, and _____; ordering supplies; and _____ keep the barn _____.

3. Sow Manager

_____ with _____, gestation, and _____.

_____ accurate _____.

Ensures the _____ is _____ for both _____ and _____.

_____ with the _____ to keep sows and piglets healthy.

_____ accurate _____ of _____, _____, and _____.

Ensures the _____ is _____ and free of _____/_____.

4. Boar Stud Manager

_____ with _____ to maintain boars.

_____ of _____ and _____ of _____.

_____ and _____ as well as _____ required for boar stud management.

_____ precise _____ of _____, _____, and _____.

Ensures the _____ is _____ and free of _____.

Keeps the barn _____ for _____ and _____/_____.

5. Breeding Manager

_____ the _____ of _____.

_____ the _____ is _____ for the _____.

Makes sure all animals have _____ and _____.

_____ animals during _____.

_____ with _____ if needed.

Makes sure that both the _____ and _____ have their _____.

Ensures _____ are done _____ and _____ are _____.

Trains and supervises _____ staff.

Manages _____.

_____ barn _____ to ensure the _____ of swine and reduce disease/pest problems.

_____ sure proper _____ is present and assigns _____ when needed.

_____ the need to _____ or _____.

6. Geneticist

_____ a _____.

_____ and _____.

Carries out _____ and/or _____.

_____ to _____ of desirable _____.

Reports and _____.

_____ population _____.

_____ the _____ of various _____.

7. A. I. Technician

_____ to _____.

_____ the area is _____.

Offers _____ to _____ and _____.

_____ with _____ and _____.

_____ accurate _____ of _____.

_____ and _____ with _____.

Administers _____.

Carries out _____ on animals.

_____ current and _____ / _____ to _____ and _____.

Stores, transports, thaws, and _____ for _____.

8. Veterinarian

_____.

_____ and _____.

_____.

_____ on animals.

Puts _____ when _____.

_____.

_____ animal owners on _____, _____, and _____.

_____ government _____.

Conducts research to improve _____ and _____.

Develops _____ that reduce _____ of _____ from _____ and _____.

9. Pharmaceutical Lab Technician

_____ and _____.

Makes and _____
_____.

_____.

Uses _____ to do complex _____ and
prepare _____.

Ensures the _____ is _____ and _____.

_____ up to date on _____ and
_____ in the field.

Conducts _____.

Demonstrates the ability to do _____.

_____ and _____ from lab.

10. Extension Agent/Educator/Specialist

_____ throughout the county they serve _____
_____ on agricultural topics to _____ and
_____.

_____ for farmers to take.

Keeps _____ on _____ in
_____ and _____ this on to _____/_____.

_____ become _____ in certain
_____.

Aids in _____ fair production.

_____ the _____ in
_____ as a career.

11. Pork Checkoff Communications Specialist

_____ social _____.

_____.

_____.

_____ podcasts.

_____.

_____ article _____ to the _____.

_____ and _____.

12. Pork Checkoff Industry Relations Specialist

_____ new _____ to _____,
_____, and _____.
_____ what the _____ is _____,
_____, _____, _____, _____,
_____, _____, and _____.
_____ a _____ to work with the _____ the
_____ is _____.
_____ in animal welfare.
_____ food safety.
_____ product _____.
_____ a _____ approach to _____
_____.

13. Human Nutritionist

_____ attention to _____ as well as _____ research and
_____ skills.
_____ and _____ new _____ for _____
_____.
_____ on new _____ and/or _____.
Has excellent _____ and _____.
_____ with _____ in
mind.
_____ with the industry to _____ that
_____ a _____.
Understands food _____ and _____ affects the
human _____.

14. Swine Nutritionist

_____ different _____ to _____ the _____
of _____ of _____.
_____ on _____
_____ for _____ and _____ accordingly.
_____ according to _____
_____ available to swine.
_____ the effect of _____ on
swine production, which includes meat to fat ratio and taste.
_____ with _____ to make sure the _____
_____ are _____.

15. Feed Sales

Stays up _____ on the _____ their
_____.
_____, which can include _____,
_____, and
_____.
_____ at _____ on
_____.
Keeps up to date on trends in the _____ and _____
_____.
_____ for _____ in the territory they cover.
Provides _____ to _____.
Only _____ with _____ the _____.

16. Pharmaceutical Sales

_____ with _____ used on _____.
Constantly _____ for _____ for the company's products.
Keeps _____ on the _____ and
_____/_____ that are available.
_____, _____, and
_____ to _____ their _____.
_____ to _____
_____ and _____ current _____.

17. Territory Sales Manager

Works with and _____ in your territory.

_____ on _____ in _____.

Keeps _____ on _____ products.

_____ territory _____ and _____ on _____ to _____ them.

Helps _____ and _____ good _____ with _____.

_____ and _____
_____/_____ accordingly.

_____ in both _____ and _____.

18. Feed Mill Manager

_____.

_____.

_____ and _____ an _____ of _____.

_____ for _____ of _____.

_____ for employees.

_____ on safety measures.

Ensures safety _____ are followed.

_____, _____, and _____.

_____ customer _____ and _____.

Keeps _____ on _____ and _____ used in feed mills.

19. Animal Trainer

Evaluates skills required for the _____ task.

_____ with human _____ and _____.

_____ to _____ to _____.

_____ for pig while _____ and _____.

_____ procedures/ _____ safety _____.

_____ pig _____ the _____.

20. Butcher/Artisan Butcher

_____ the _____ follows

_____.

_____ of _____ coming in.

Properly _____ for cutting.

_____ into _____ and _____ cuts.

_____ / _____ meat.

Keeps _____ with consumer _____.

Offers _____ on _____ to _____ a certain _____ of _____.

Butchers can _____ in a _____ store or _____ plant.

_____ work at a _____ / _____ shop.

Careers in Swine Production – Answer Key

Directions: Fill in the blanks with the information on the slide presentation.

1. Quality Control Inspector

This career is divided into three segments.

The first covers the farm.

This person is looking for proper sanitation practices that prevent disease.

The second covers the slaughterhouse.

In the slaughterhouse, there are several quality factors to examine.

One inspector will ensure the slaughterhouse is kept clean and free of disease.

A second inspector will examine the carcass for its water-holding ability which producers prefer because it will hold a cure better.

The third type of quality control inspector examines the carcass and cuts to ensure the consumer will be pleased.

They look for the amount of fat in the meat and the color of the pork, which consumers want a uniform reddish-pink color.

2. Barn Manager

The most important job of a barn manager is the proper care and maintenance of swine.

Barn manager tasks include arranging schedules for other employees; scheduling veterinarian visits, feedings, addition of supplements, and medications; ordering supplies; and helping keep the barn clean.

3. Sow Manager

Helps with sow breeding, gestation, and pig farrowing.

Keeps accurate breeding records.

Ensures the environment is safe for both swine and staff.

Works with the veterinarian to keep sows and piglets healthy.

Keeps accurate records of vaccinations, illnesses, and medications.

Ensures the barn area is clean and free of disease/pests.

4. Boar Stud Manager

Works with veterinarian to maintain boars.

Keeps records of boar movement in and out of stud.

Orders and maintains equipment as well as supplies required for boar stud management.

Keeps precise records of vaccinations, illnesses, and medications.

Ensures the barn is clean and free of disease/pests.

Keeps the barn safe for animals and employees.

5. Breeding Manager

Oversees the welfare of all swine.

Ensures the room is ready for the sow.

Makes sure all animals have feed and water.

Aids mother animals during birth.

Helps with C-sections if needed.

Makes sure that both the mother and babies have their vaccinations.

Ensures nursery procedures are done correctly and wounds are treated.

Trains and supervises breeding staff.

Manages weaning.

Manages barn cleaning to ensure the health of swine and reduce disease/pest problems.

Makes sure proper ventilation is present and assigns heat lamps when needed.

Manages the need to euthanize mother or baby.

6. Geneticist

Creates a selective breeding program.

Studies and evaluates pedigrees.

Carries out genetic research and/or lab tests.

Develops techniques to improve heredity of desirable traits.

Reports and communicates genetic trends.

Studies population genetics.

Maps the genomes of various species.

7. A. I. Technician

Provides A.I. services to clients.

Ensures the area is properly sanitized.

Offers reproduction consultations to farmers and breeders.

Treats animals with care and respect.

Keeps accurate records of inseminations.

Supervises and aids with heat detection.

Administers vaccinations.

Carries out pregnancy checks on animals.

Introduces current and new products / services to farmers and breeders.

Stores, transports, thaws, and prepares semen for insemination.

8. Veterinarian

Examines animals.

Diagnoses diseases and pests.

Treats wounds.

Performs surgery on animals.

Puts animals down when needed.

Prescribes medication.

Advises animal owners on proper housing, feeding, and general health practices.

Enforces government food safety rules.

Conducts research to improve animal health and well-being.

Develops programs that reduce transmission of disease from animal to animal and animal to human.

9. Pharmaceutical Lab Technician

Prepares _____ samples _____ and
specimens _____.

Makes and _____ operates _____ standard _____ lab
equipment _____.

Performs _____ lab _____ tests _____.

Uses _____ computers _____ to do complex _____ mathematical
calculations _____ and prepare _____ graphs _____.

Ensures the _____ lab _____ is _____ clean _____ and _____ stocked _____.

Keeps _____ up to date on _____ new _____ techniques _____ and
technology _____ in the field.

Conducts _____ research _____.

Demonstrates the ability to do _____ basic _____ lab
procedures _____.

Records _____ and _____ presents _____ results _____ from
lab.

10. Extension Agent/Educator/Specialist

Travels _____ throughout the county they serve _____ providing
education _____ on agricultural topics to _____ farmers _____ and _____ breeders _____.

Creates _____ classes _____ for farmers to take.

Keeps _____ up _____ to _____ date _____ on _____ advancements _____ in _____ agriculture _____ and _____ passes _____ this on to
farmers/breeders _____.

Helps _____ farmers _____ become _____ certified _____ in certain _____ programs _____.

Aids in _____ county _____ fair production.

Works _____ with _____ the _____ young _____ farmers _____ program _____ in _____ promoting _____ agriculture _____ as a career.

11. Pork Checkoff Communications Specialist

Manages _____ social _____ media _____ channels _____.

Creates _____ newsletters _____.

Copywrites _____.

Creates _____ digital _____ content _____.

Creates _____ podcasts _____.

Manages _____ communication _____ calendar _____.

Pitches _____ article _____ ideas _____ to the _____ media _____.

Writes _____ and _____ edits _____ press _____ releases _____.

12. Pork Checkoff Industry Relations Specialist

Promotes new pork products to chefs, consumers, and suppliers.

Determines what the consumer is thinking, seeing, hearing, searching, feeling, saying, buying, and eating.

Creates a plan to work with the information the consumer is receiving.

Builds trust in animal welfare.

Promotes product food safety.

Showcases product health benefits.

Creates a transparent approach to swine production.

13. Human Nutritionist

Has attention to detail as well as good research and analysis skills.

Prepares and analyzes new dishes for dietary breakdown.

Improves on new recipes and/or products.

Has excellent written and verbal communication.

Creates diets with certain requirements in mind.

Works with the industry to create products that promote a healthy lifestyle.

Understands food science and how food affects the human body.

14. Swine Nutritionist

Creates different feeds to meet the needs of different stages of swine production.

Keeps up to date on consumer preference for swine and adjusts feed accordingly.

Updates feed formulations according to new foodstuffs available to swine.

Tests the effect of new feed formulas on swine production, which includes meat to fat ratio and taste.

Works with veterinarian to make sure the swine dietary needs are met.

15. Feed Sales

Stays up to date on the products their company sells.

Visits customers, which can include farms, retail stores, feed stores, and hardware stores.

Provides training at retail stores on new products.

Keeps up to date on trends in the feed industry and livestock production.

Looks for new clients in the territory they cover.

Provides support to clients.

Only deals with what the swine eat.

16. Pharmaceutical Sales

Only deals with medications used on swine.

Constantly looks for new clients for the company's products.

Keeps up to date on the swine industry and new / old medications that are available.

Visits retail stores, farms, and hardware stores to promote their products.

Visits veterinarians to promote new products and replenish current stock.

17. Territory Sales Manager

Works with and trains sales representatives in your territory.

Keeps up to date on trends in swine production.

Keeps up to date on new company products.

Sets territory sales goals and strategy on how to achieve them.

Helps build and maintain good relationships with customers.

Monitors sales and adjusts goals / strategy accordingly.

Works in both feed and pharmaceutical sales.

18. Feed Mill Manager

Examines production records.

Schedules feed production.

Orders and keeps an inventory of feed ingredients.

Tests for quality of feed.

Sets schedules for employees.

Trains employees on safety measures.

Ensures safety measures are followed.

Prepares monthly, quarterly, and yearly budgets.

Handles customer questions and complaints.

Keeps up to date on new techniques and equipment used in feed mills.

19. Animal Trainer

Evaluates skills required for the _____ pig's _____ task.

_____ Familiarizes _____ pig _____ with human
_____ voices _____ and _____ contact _____.

_____ Teaches _____ pig _____ to _____ respond _____ to
_____ commands _____.

_____ Cares _____ for pig while _____ training _____ and
_____ performing _____.

_____ Ensures _____ procedures/ _____ stunts _____
_____ follow _____ safety _____ protocol _____.

_____ Transports _____ pig _____ to _____ the _____ job _____.

20. Butcher/Artisan Butcher

_____ Ensures _____ the _____ work _____
_____ environment _____ follows _____ board _____ of _____
_____ health _____ protocol _____.

_____ Keeps _____ record _____ of _____ product _____ coming in.

Properly _____ stores _____ meat _____ for cutting.

_____ Cuts _____ meat _____ into _____ standard _____ and
_____ specialty _____ cuts.

_____ Makes _____ sausage _____ / _____ cures _____ meat.

Keeps _____ up _____ to _____ date _____ with consumer
_____ trends _____.

Offers _____ advice _____ on _____ how _____ to _____ prepare _____ a certain
_____ cut _____ of _____ meat _____.

Butchers can _____ work _____ in a _____ grocery _____ store or
_____ meat _____ processing _____ plant.

_____ Artisan _____ butchers _____ own _____ or _____ work at a
_____ butcher _____ / _____ specialty _____ shop.

Lesson Seven – Marketing, Careers, and Training

REVIEW: Careers in Swine Production Recap

10 minutes

Purpose:

Participants will review careers in swine production by first exploring a career they have interest in and then test their career knowledge with a quiz.

Materials:

- *Career Exploration Graphic Organizer* worksheet
- *Careers in Swine Production Quiz*
- *Careers in Swine Production* – Answer Key

Facilitation Steps:

1. Hand out the *Career Exploration Graphic Organizer* worksheet.
2. Instruct participants how to complete the worksheet along with where information for their career can be found.
3. Give participants five minutes to explore their career.
4. Collect the worksheet.
5. Pass out the *Careers in Swine Production Quiz*.
6. Give participants five minutes to complete the quiz.
7. Collect quizzes.

Name: _____ Class: _____

Careers in Swine Production Quiz

Directions: After reading each statement, determine if the statement is true or false. Answer by circling your choice.

1. A pork checkoff industry relations specialist does not promote new pork products. True or False
2. Pharmaceutical sales only deals with medical supplies. True or False
3. A breeding manager only deals with sows. True or False
4. An extension agent can help a farmer become certified in certain programs. True or False
5. Keeping up to date on trends and what consumers desire is not important to any career in swine production. True or False
6. Digital marketing is an important responsibility of the pork checkoff communication specialist. True or False
7. Having a basic understanding of what swine require in their diet is not important to know if you are in feed sales. True or False
8. An A. I. technician does not provide farmers or breeders with any advice when it comes to reproduction. True or False
9. A geneticist does not study pedigrees. True or False
10. Grocery stores are the only employers for butchers. True or False

Careers in Swine Production Quiz – Answer Key

Directions: After reading each statement, determine if the statement is true or false. Answer by circling your choice.

1. A pork checkoff industry relations specialist does not promote new pork products. True or **False**
2. Pharmaceutical sales only deal with medical supplies. **True** or False
3. A breeding manager only deals with sows. True or **False**
4. An extension agent can help a farmer become certified in certain programs. **True** or False
5. Keeping up to date on trends and what consumers desire is not important to any career in swine production. True or **False**
6. Digital marketing is an important responsibility of the pork checkoff communication specialist. **True** or False
7. Having a basic understanding of what swine require in their diet is not important to know if you are in feed sales. True or **False**
8. An A. I. technician does not provide farmers or breeders with any advice when it comes to reproduction. True or **False**
9. A geneticist does not study pedigrees. True or **False**
10. Grocery stores are the only employers for butchers. True or **False**

Career Exploration Graphic Organizer

Compare and contrast careers working in the career cluster of agriculture that relates to this animal. Possible sources for information include your school library, public library, Bureau of Labor Statistics website, Occupational Outlook Handbook website, FFA, or other career-related websites on the internet.

CAREER: _____

Degree or license required	
Length of time to complete training or earn degrees	
Average starting salary per year	
Average hourly wage	
Job outlook	
5 skills needed for this job	
Describe the job setting	
What are the primary job duties?	
Do you work alone or with people?	
What needs or wants does this occupation fill?	

What is one thing an employer would expect from someone in this position?	
What kinds of people will be successful in this career?	

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