

SWINE : From the Animal's Point of View

4

SUBJECT OVERVIEW AND BACKGROUND INFORMATION

There are several factors that can contribute to the deterioration of a pig's health, but diseases in these animals usually do not occur "out of nowhere." Illnesses and diseases frequently happen when a pig experiences stress, has a poor diet, is exposed to other pigs that are ill, consumes contaminated food or water, or is housed in an inappropriate environment (i.e., too hot, unsanitary). Some common diseases are pneumonia, pseudo rabies (mad itch), and swine dysentery. Swine can also have external parasites such as lice and mange mites or internal parasites that live inside the pig's body.

Similar to humans, swine need to have some basic living standards met in order to stay healthy. Having the right diet is crucial to a pig's health. A pig that is malnourished is more vulnerable to disease. The immune system of a malnourished animal has a harder time fighting off pathogens (e.g., disease-causing bacteria or viruses) than that of a well-nourished animal, so disease is more likely to take over the underfed pig's body and bring about still more health problems. A healthy diet can prevent myriad diseases.



Pig Disease: What You Need to Know

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The content in this curriculum is designed to introduce youth to swine behavior, needs and care. Additional emphases include life skills and positive youth development. This is not a guide to raising swine for market or exhibition.

In addition, the practice of good hygiene can prevent a health disaster. By keeping the pig's environment, food, and water as clean as possible, you cut down the chances that bacteria or other pathogens will thrive. Maintenance of the correct temperature in a pig's environment contributes significantly to its health. Overheating can cause dehydration and heatstroke—which can result in death. If kept in too cold an environment, a pig can become ill or, in extreme cases, get frostbite and die. Housing the pig in a low-stress environment is a way of protecting its health. Stressors vary, but a few examples are excess noise and crowded conditions—too many pigs housed in too small an area. When a pig is scared or stressed, its activity level and appetite will probably change.

Though there are many diseases and illnesses that can attack swine, the youth who care for them can take an active role in disease prevention simply by monitoring their pigs on a daily basis. There are several indicators that youth can watch for: the quality of the feces, the pig's activity level, its appetite, and its skin.

Concepts and Vocabulary

- **Direct contact:** Physical contact between an ill person or animal and a healthy person or animal.
- **Disease:** An abnormal condition that affects the normal functioning and health of an organism, decreasing the health of that organism.
- **Disease prevention:** Taking the necessary steps to prevent humans or animals from getting sick.
- **Disease transmission:** The transfer of a disease from one person or animal to another.
- **Germs:** Microorganisms that have the potential to cause diseases.

- **Health care monitoring:** Close observation of an animal's health, behavior, and activity every day to determine what is normal or abnormal about the animal.
- **Illness:** The condition of being unhealthy or in poor health.
- **Indirect contact:** When an uninfected person or animal touches a contaminated surface of an inanimate object (e.g., table top, food dish).
- **Preventive health care:** Actions that maintain the health of humans and animals by preventing them from becoming ill in the first place.

Life Skills

Communication, contributions to group effort, cooperation, critical thinking, decision making, disease prevention, keeping records, problem solving, sharing, teamwork

Subject Links

Science, Language Arts

Overview of Activities

This section of the curriculum begins with the activity “How Fast Can Germs Spread?” In this activity, youth will be exposed to the concept of the dissemination of diseases and germs. By spreading glitter from one youth to several others in a short period of time, it mimics the alarmingly fast rate at which a germ can be disseminated. Not only does this activity show youth a common characteristic of contagious diseases, it stresses the significance of practicing good hygiene. When the youth wash their hands after the activity, they can see that the bits of glitter (or “germs”) have been removed.

In the next activity, “Is My Pig Sick?,” youth will have an opportunity to experience and learn when, why, and how pigs can get sick. Each youth will represent a pig as they play

a modified version of musical chairs. The names of different pig diseases will be read out and the youth (playing pigs) will determine whether in their own condition they are able to withstand each disease. If they cannot, they will be sent to the veterinary clinic where they will learn how to get better and things to watch out for that can inhibit their progress.

In the final activity, “My Pig's Health,” youth are separated into small groups. Each group is given five daily journal entries related to a particular pig, and they are to observe and record important health facts from those journals. After reviewing all five entries for their group, the groups will be given a list of pig disease descriptions. Based on their notes, each group will come up with a suggested diagnosis for their pig and an explanation of how they reached their diagnosis. Some diseases have similar symptoms, so the activity will teach the youth that they cannot always diagnose their pigs on their own and that professional veterinary care is important. Disease symptoms can be ambiguous. It's important to know when to consult a professional in order to find out what is actually affecting your animal's health.

REFERENCES

- Farley, J. L., and W. J. van Riet (eds.). n.d. Swine care practices. California Pork Industry Group and University of California Cooperative Extension. www.vetmed.ucdavis.edu/vetext/local-assets/pdfs/pdfs_animal_welfare/swinecareprax.pdf.

FACTS ABOUT SWINE

DISEASE

Basic Facts

- A healthy pig should have:
 - » Big and healthy appetite
 - » Body temperature of around 102.5°F
 - » Smooth, shiny coat
 - » Tightly curled tail
- An unhealthy pig may have:
 - » Decreased appetite
 - » Rough hair coat
 - » Lots of coughing
 - » Dull look in its eyes
 - » Diarrhea
 - » Inactivity
 - » Lameness

Prevention of Diseases

- The best solution to swine diseases is prevention. Measures to take to decrease the risk of infection include:
 - » Routine health procedures, which include vaccination, monitoring on a regular basis, and feed additives to ensure that no nutrient is deficient

- » When bringing home a new pig, making sure the pig has had a complete check up and is infection-free
- » Always washing hands before and after handling your pig
- » Maintaining a clean and well-managed environment for your pig

- Pigs are prone to stress that may be caused when you vaccinate, change the pig's environment, or add a new pig. When pigs are stressed, they eat less, grow slower, and are more susceptible to diseases. Therefore it is important to try to minimize or avoid stress in a pig.

The Diseases

Like any animal, a pig can be affected by many diseases. Listed below are a few diseases that pigs may face. If your pig exhibits any of the symptoms or signs listed below or has unusual behavior, seek veterinary help immediately.

- **Pseudorabies or Aujeszky's Disease.** This is a contagious disease caused by a virus. It causes inflammation of the brain and the spinal chord, and also respiratory tract infection. It can be spread directly from animal to animal or by means of other inanimate objects such as clothing and feed. The symptoms differ according to pig's age; young piglets may show fever, muscle twitching, convulsions, and

paralysis, and the usual result is death. For adolescent pigs, respiratory signs such as coughing and sneezing may be present, but death is much less likely. In adults, reproductive problems such as stillbirth and giving birth to weak piglets may result. There is no treatment for this virus, so prevention of the disease (i.e., by means of vaccination or strict sanitation) is essential.

- **Swine Dysentery.** This is caused by bacteria and affects mostly post-weaning pigs. The bacteria can be transmitted through pig-to-pig contact or on feces, clothing, or on other animals (i.e., rats and mice). Symptoms include diarrhea, loss of coordination, dehydration, and weakness. Although swine dysentery may result in death if left untreated, proper treatment that includes disinfecting the area can restore the pig's health.
- **Mycoplasma Pneumonia.** This disease is caused by bacteria. It is very contagious and can be transmitted through the air, but can also be transmitted as a result of poor management, such as poor water flow, dusty feed, and drafty conditions. Symptoms include coughing, fever, difficulty in breathing, and reduced appetite. Antibiotics can be given to minimize the effects but vaccination and proper management are more efficient.

- **Swine Influenza (Swine Flu).** This is a contagious disease caused by a virus and can be transmitted to humans. Infected pigs may be inactive, have decreased feed intake, and have a fever. There is no cure—only treatments that will decrease the effect of the influenza. For prevention, it is important to minimize stress for the pigs, to vaccinate, and to use other proper management techniques.
- **Mange Mites.** This is the effect of a mite that is an external parasite of pigs. The mites can be transmitted not only from pig to pig but also from pigs to humans. The affected area of skin becomes dry and leathery, and as the pig rubs its body against objects to relieve itchiness the skin may become raw. Infected swine may also have a reduced growth rate. Mange mites may result in the pig's death if not treated. Mange can be treated with proper medication.
- **Foot and Mouth Disease.** This disease is very contagious because it can easily spread via the wind and can infect many animals. Infected animals will show signs of

lameness and blisters or vesicles around the mouth and snout area and around the legs and hooves. They are inactive and are usually lying down. There is currently no cure for the disease. Infected animals should be euthanized in order to prevent spread of the disease. The best way to prevent the spread of this disease to your pigs is to minimize the amount of outside exposure to your pigs, disinfect all equipment and clothing that may be in contact with your pigs, and keep the facility and the pigs' living area clean and disinfected.

- **Gastric Ulcers.** This disease causes damage of the stomach lining. Symptoms of this disease will vary depending on the type of pig and the severity of the disease. General symptoms include pale skin, vomiting, weight loss, loss of appetite, teeth grinding, lack of energy, and dark-colored droppings. The ulcers can occur if there is a lack of essential nutrients in the diet. Certain types of foods can also cause ulcers. Stress can also cause gastric ulcers. To prevent

this disease, feed your pigs a well-balanced diet and maintain a clean and stress-free environment.

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- Center for Food Security and Public Health. n.d. Swine diseases and resources. Iowa State University. www.cfsph.iastate.edu/Species/swine.php.
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- Loftin, K. M. n.d. Protect swine from external parasites. University of Arkansas Division of Agriculture, Cooperative Extension Service. www.uaex.edu/publications/PDF/FSA-7034.pdf.
- The Merck Veterinary Manual. 2008. Merck & Co., Inc. www.merckmanuals.com/vet/.

ACTIVITY 1

How Fast Can Germs Spread?

BACKGROUND INFORMATION

Germs are tiny organisms that can cause disease. They are generally spread by direct contact (e.g., touching) with an infected organism (e.g., animal or human) or indirect contact with an object (e.g., food dish, water trough) that an infected animal used. Most germs are spread through the air via sneezes or coughs, but they can also be spread through sweat, saliva, and blood. Germs are everywhere; they can adhere to objects (e.g., doorknobs, money) and body parts (e.g., hands), and can be spread by touching something that is contaminated (e.g., by shaking hands with someone who has touched an infected animal). This is why good sanitation (e.g., hand washing) is important in disease prevention.

Time Required

25–40 minutes

Concepts and Vocabulary

Disease prevention, disease transmission, direct contact, germs, indirect contact

Life Skills

Communication, cooperation, disease prevention, problem solving, sharing

Subject Links

Language Arts

State Content Standards

Language Arts

- Fourth Grade:
 - » Listening and Speaking Strategies – 1.7, 1.8
- Fifth Grade:
 - » Listening and Speaking Strategies – 1.5
- Sixth Grade:
 - » Listening and Speaking Strategies – 1.5
 - » Speaking Applications – 2.5a, 2.5b

Materials Needed

(* = Materials provided in curriculum)

- Glitter
- * Pig Cards
- Vacuum or broom recommended (for cleanup at the end)

Getting Ready

- Prepare the *Pig Cards* so the volunteer and each youth get a card.
- Sprinkle one color of glitter on the floor in different places around the room.
- Put another color of glitter on a few of the chairs where the youth will be sitting.
- **Volunteer ONLY:** Put a third color of glitter on your right hand, but don't let anyone see that you are doing so. Do this only after you have passed the *Pig Cards* out to the youth.

OPENING QUESTIONS

1. What are some ways you can tell if you are sick? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. What are some ways you might be able to tell if a pig is sick? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. What do you know about different ways you can get sick? What do you know about different ways a pig might get sick? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. What are some ways you think diseases can be spread from one human to another? From one pig to another? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

PROCEDURE (EXPERIENCING)

1. Provide each youth with a Pig Card.
2. Volunteer tip: Discuss the rules for this game:
 - Everyone will pretend to be the pig on the Pig Card they have. The volunteer and the youth move around the room shaking hands with other “pigs,” introducing themselves by name and breed, and sharing the fun facts about themselves that they find on their Pig

Cards. The goal of the game is to get each participant to shake hands with several other “pigs,” but not with all of them. Additionally, youth will learn interesting information about a few other pig breeds.

3. The “Volunteer pig” will start the game by introducing himself or herself to one “youth pig,” and the game will proceed from there.

SHARING, PROCESSING, AND GENERALIZING

Follow the lines of thinking developed by the youth as they share and compare their thoughts and observations; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. What did you learn about different breeds of pig? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. What do you know about disease or illness prevention? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. When the youth look at their own hands, what do they notice about them? Please explain. Have them try to associate the glitter with germs. Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

4. When the youth look at their feet and clothes, what do they notice about them? Please explain. Have them try to associate the glitter with germs. Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
5. Ask the youth to share what happened during the activity. What did they learn about spreading germs? Where did the germs come from? Does anyone know how he or she got the germs? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
6. How might all of this relate to getting sick or staying well? What did you learn about becoming sick? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
7. At the end of discussion, have the youth wash their hands with soap to get rid of the “germs.”

CONCEPTS AND TERMS

At this point, volunteers need to ensure that the concepts and terms “direct contact,” “disease prevention,” “disease transmission,” “germs,” and “indirect contact” have been introduced. (Note: The goal is to have the youth develop these concepts through their own exploration and define the terms using their own words.)

CONCEPT APPLICATION

Ask the youth to think of things they could do at home (e.g., washing hands; wiping down counter tops; cleaning door handles) that would help reduce their risk of contracting and spreading diseases.

Ask the youth to consider ways to reduce the risk that their animal (4-H project animal or pet) will contract and spread diseases (e.g., cleaning food and water bowls).

REFERENCES

Sterle, J., A. I. Dement, and F. C. Faries. n.d. Biosecurity for swine producers. AgriLife Extension, National Center for Foreign Animal and Zoonotic Disease Defense, Texas A&M University. <http://agrilife.org/victoriacountyagnr/files/2010/07/Biosecurity-for-Swine-Producers-1.pdf>.

Swine Cards

Name: Porkser
Breed: Yorkshire

Facts: During World War I, the oils and fats from this pig were used to make ammunition and food. At that time, the cost of lard and muscle were the same.



Name: Danny
Breed: Devon Closewool

Facts: This breed has a long and lean body and does not have noticeable excess fat or wrinkles. It has very high fertility and provides excellent care to its young.



Name: Harold
Breed: Hereford

Facts: To be registered as a Hereford, a pig must have a white face, at least two of its feet must be white at least one inch above the heel, and its coloring must be either light or dark red.



Name: Sir Lancelot
Breed: Berkshire

Facts: Due to its excellent carcass quality, this pig was favored by upper class English farmers and even by the Royal family.



Name: Zu
Breed: Fengjing

Facts: Pigs of this breed grow slowly and produce a lot of fat, making them very good to eat. They can resist some diseases and can eat a lot of roughage.

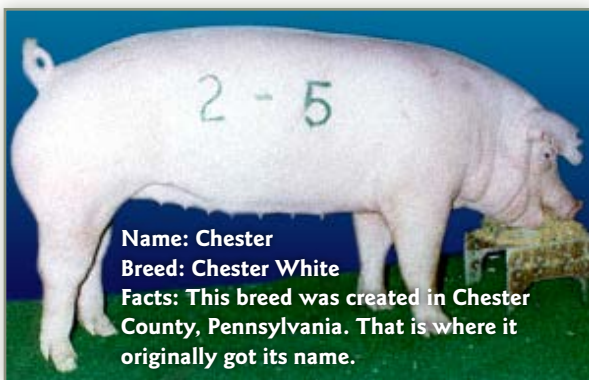


Name: Jin
Breed: Jinhua

Facts: The Jinhua breed has a white body with a black head and rump. It is known for the quality of its meat, having a thin skin, fine bones, and tender meat.



Name: Chester
Breed: Chester White
Facts: This breed was created in Chester County, Pennsylvania. That is where it originally got its name.



Name: Gracie
Breed: Gloucestershire Old Spots
Facts: These pigs are white with black spots. Due to genetic selection for more of a white coat, there are usually only one or two black spots on a pig.



Name: Kelly
Breed: Kele
Facts: Kele pigs originated in a higher-altitude area in southwest China, where environmental conditions are harsh and constantly changing. Their physical characteristics allow them to perform well in this type of environment.

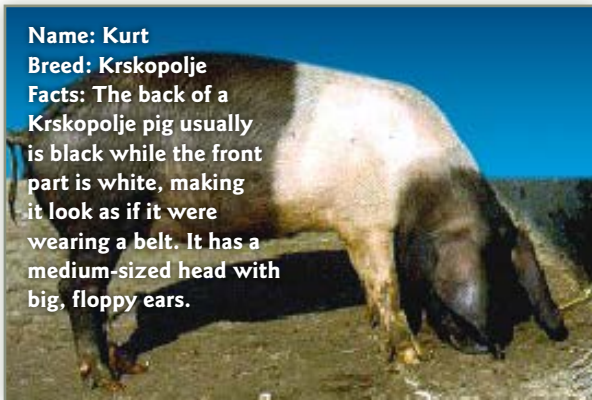


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Name: Kurt

Breed: Krskopolje

Facts: The back of a Krskopolje pig usually is black while the front part is white, making it look as if it were wearing a belt. It has a medium-sized head with big, floppy ears.



Name: Moria

Breed: Mora Romagnola

Facts: This breed is native to the Ravenna province in Italy. As of this writing, there are only 18 surviving animals of the breed in a single herd in Faenaz, Ravenna. Conservation research is being conducted in Europe to preserve this breed.



Name: Nelly

Breed: Ningxiang

Facts: Ningxiang pigs are raised primarily for their lard. Their color pattern is described as "black clouds overhanging snows with a silver ring around the neck."



Name: Larry

Breed: Large Black

Facts: The Large Black breed is known for its big, droopy ears—so big, fact, that they usually cover most of the pig's face, blocking its sight. The pig's difficulty in seeing is believed to contribute to its calm behavior.



Name: Mei

Breed: Meishan

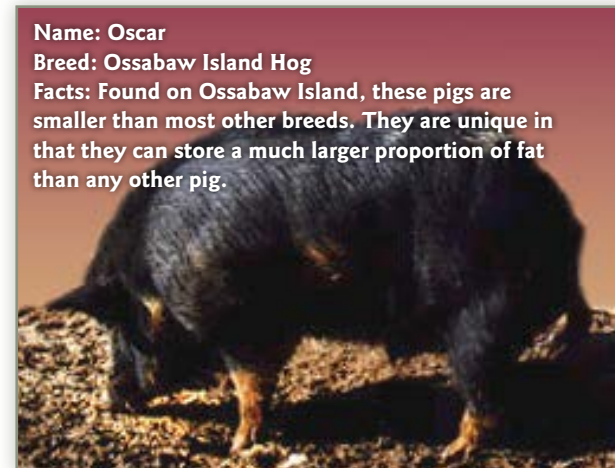
Facts: Meishan pigs are known for their wrinkled face and skin. They are also known for the large litter sizes of 15-16 offspring.



Name: Oscar

Breed: Ossabaw Island Hog

Facts: Found on Ossabaw Island, these pigs are smaller than most other breeds. They are unique in that they can store a much larger proportion of fat than any other pig.



Name: Maggie

Breed: Mangalitsa

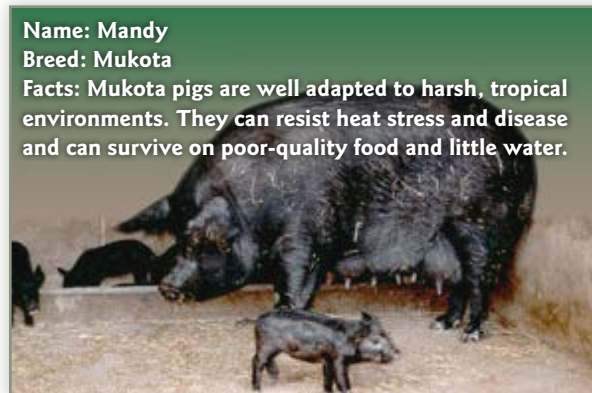
Facts: Mangalitsa is a strong breed that is able to resist disease and stress. Its powerful legs and hooves allow it to move through any type of terrain.



Name: Mandy

Breed: Mukota

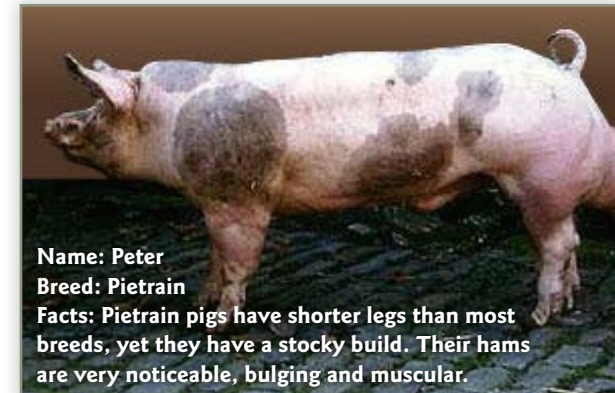
Facts: Mukota pigs are well adapted to harsh, tropical environments. They can resist heat stress and disease and can survive on poor-quality food and little water.



Name: Peter

Breed: Pietrain

Facts: Pietrain pigs have shorter legs than most breeds, yet they have a stocky build. Their hams are very noticeable, bulging and muscular.





Print one-sided on heavy paper and cut out along dashed lines.



Name: Spots
Breed: Spots

Facts: Spots pigs feed really well, mature early, and produce many offspring.



Name: Vernon
Breed: Vietnamese Potbelly

Facts: Vietnamese Potbelly is considered a dwarf breed. Many people want them as pets, but don't realize that they will not always stay small and cute. They grow to up to 100 lb and don't like to be picked up or held.



Name: Vanessa
Breed: Ba Xuyen

Facts: Ba Xuyen pigs have adapted to live in saltwater zones. They have proportional areas of black and white on their body.



Name: Tammy
Breed: Tamworth

Facts: The Tamworth pig has a smooth and firm body. This breed is used for bacon.



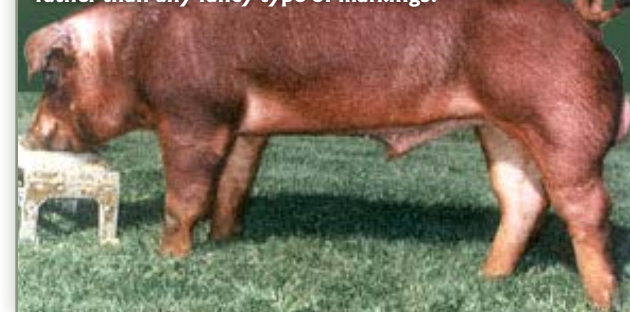
Name: Ariel
Breed: Arapawa Island

Facts: It is believed that whalers and early farmers introduced this breed to Arapawa Island, off New Zealand, in the middle 19th century.



Name: David
Breed: Duroc

Facts: Duroc pigs range in color from light golden yellow to dark red. Pork producers prefer the simple red color rather than any fancy type of markings.



Name: Trevor
Breed: Turopolje

Facts: Found in woodlands, Turopolje pigs predominately eat acorns. For protein, they find and eat worms and larvae found in wood.



Name: Betty
Breed: Bazna

Facts: Bazna pigs are not picky or demanding in the type of food they eat. They can eat roots, pasture, potatoes, corn, and food wastes.



Name: Hairy
Breed: Hezuo

Facts: Hezuo pigs have long, coarse, dense bristles. They have a slow growth rate and produce few offspring.





Name: Ken
Breed: Kunekune
Facts: Found in New Zealand, all of the Kunekune pigs found in the country are descendants of 18 original pigs. Now they number over 5,000.



Name: Lacey
Breed: Lithuanian Native
Facts: This breed is close to extinction, so the remaining specimens are now at the Lithuanian Institute of Animal Science. About 160 pigs are there, and they are restricted to breed within the group.



Name: Marissa
Breed: Mong Cai
Facts: The Mong Cai breed is desirable because it produces many offspring, it can adapt to eating poor-quality food, and it can resist diseases.



ACTIVITY 2

Will My Pig Get Sick?

BACKGROUND INFORMATION

There are more than 140 diseases and conditions that can affect domestic pigs. Many of these are related to management or environmental factors such as stress, environmental cleanliness, environmental temperature, and quality of diet.

Though there are many diseases and illnesses, youth can take an active role in disease prevention by simply monitoring their pig on a daily basis: thoroughly evaluating its environment (e.g., housing), its diet, and its history (e.g., age, medical records, origin). There are several indicators that youth can watch for: the quality of the pig's feces, the pig's activity level, its appetite, and its skin. Because the origin of a disease is not always easy to identify, the more information you can provide your veterinarian, the better. In this way, you will help ensure that your pig receives the proper treatment and has the best chance for a full recovery.

Time Required

40–60 minutes

Concepts and Vocabulary

Preventive Health Care

Life Skills

Critical thinking, decision making, disease prevention, keeping records, problem solving, sharing

Subject Links

Language Arts

State Content Standards

Language Arts

- Fourth Grade:
 - » Listening and Speaking Strategies – 1.7, 1.8
- Fifth Grade:
 - » Listening and Speaking Strategies – 1.5
- Sixth Grade:
 - » Listening and Speaking Strategies – 1.5
 - » Speaking Applications – 2.5a, 2.5b

Suggested Grouping

Individuals or pairs

Materials Needed

(* = Materials provided in curriculum)

- Seven tables with 3–5 chairs each (enough chairs to accommodate the entire group; one chair per child)
- One CD, cassette, or digital music player; one music CD or tape
- One six-sided die
- * Pig Characteristic cards
- * Pig Illness cards
- * Veterinary Procedure cards
- * Health Care Log (Concept Application)
- Three (3) containers (e.g., large bowls; paper bags)
- Flipchart paper
- Markers
- Tape

Getting Ready

- Organize the tables and chairs around the room so the youth can move freely between them.
- Using a piece of paper and a marker, randomly assign a number (1–6) to each of the tables.
- Place the seventh table off to the side of the room (in a corner or against the wall) and label it “Veterinary Hospital.”
- Copy enough *Pig Characteristic* cards so each youth gets one card. Cut the cards out and place them in one of the containers.
- Cut out the *Pig Illness* cards and place them in a second container.
- Make at least 2 copies of the *Veterinary Procedure* cards. Cut the cards out and place them in a third container on the “Veterinary Hospital” table.

OPENING QUESTIONS

Working in small groups, ask the youth the following:

1. **What are some things that humans can do to avoid getting sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **How can some of the things listed in the previous question also be applied to pigs to help them remain healthy?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

PROCEDURE (EXPERIENCING)

1. Have each individual or pair choose one *Pig Characteristic* card at random from the container. This will be their pig for this activity.
2. Explain to the youth that they are going to play a modified game of “Musical Chairs.” They are to move around the room and between the tables while the music is playing; when the music stops, they are to find a chair and sit down.
3. The volunteer rolls the die and announces the number (1–6) that has been rolled.
4. The volunteer now draws one of the *Pig Illness* cards out of the bowl. Explain to the youth that one of the pigs at that numbered table has this illness, and some of the others may contract the disease, depending on the pig’s health and environment.
5. The volunteer reads the information on the *Pig Illness* card that he or she has drawn. Have the youth read their *Pig Characteristic* card and determine if their pig will contract the disease or not. Those youth whose pigs contract this illness must relocate to the Veterinary Hospital table; those whose pig do not become ill will remain at their table and play the next round of “Musical Chairs.”
6. Before the start of the next round, each of the youth at the Veterinary Hospital table draws one *Veterinary Procedure* card. If a card contains the appropriate information to cure their pig, the youth will place the card back into the container and leave the Veterinary Hospital table to play the next round. If not, the youth will place the card back into the container and draw another *Veterinary Procedure* card at the end of the next round.
7. Continue playing the game until the volunteer has used all of the *Pig Illness* cards.
8. Repeat the game if you like.

SHARING, PROCESSING, AND GENERALIZING

Review all the pig illnesses that have just been introduced to see what the youth remember and understand. Then discuss, following the lines of thinking developed through the general thoughts, observations, and questions raised by the youth. If necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. **What did you learn about pig illnesses from this activity? Please explain.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What were some common factors that caused the spread of disease?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What are some things one could do to slow down or stop diseases from spreading?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **If your friend were getting a pig, what are some things you would tell him or her that would help keep their pig healthy and happy?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

CONCEPTS AND TERMS

At this point, volunteers need to ensure that the term “preventive health care” has been introduced or discovered by the youth. (Note: The goal is to have the youth discover the concepts and terms on their own. It helps if they can define terms and concepts using their own words.)

CONCEPT APPLICATION

- For youth who own their own pig, have them develop a health care log that includes:
 - » A checklist for adequate housing (e.g., proper temperature, sanitation).
 - » Dietary monitoring (e.g., type of food, amount of food, feeding schedule).
 - » Observations of behavior.
 - » Observations of appearance.
 - » Veterinary updates (e.g., dates of check-ups, dates of vaccines).Ask the youth to discuss their health care log with each other and share ideas.
- For youth who do not own a pig, have them develop a health care log for another household pet that they may own.

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Pig Characteristic Cards

Pig Name: Agatha
Age: Young pig
Environment: Clean environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Wilbur
Age: Young pig
Environment: Dirty environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Mary
Age: Young pig
Environment: Clean environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Fred
Age: Older pig
Environment: Clean environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Thompson
Age: Older pig
Environment: Dirty environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Violet
Age: Older pig
Environment: Clean environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Bertha
Age: Young pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Babe
Age: Young pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Ms. Piggy
Age: Young pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Porky
Age: Older pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Stud
Age: Older pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Dacio
Age: Older pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature
Pig Name: Earl

Pig Characteristic Cards, continued

Age: Young pig
Environment: Dirty environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Hector
Age: Young pig
Environment: Clean environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Karl
Age: Young pig
Environment: Dirty environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Gabe
Age: Older pig
Environment: Dirty environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Nancy
Age: Older pig
Environment: Clean environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Debbie
Age: Older pig
Environment: Dirty environment
Diet: Proper diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Gabby
Age: Young pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: George
Age: Young pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Pablo
Age: Young pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Ernst
Age: Older pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides proper temperature

Pig Name: Hammy
Age: Older pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Handsome
Age: Older pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: High stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Characteristic Cards, continued

Pig Name: Princess
Age: Young pig
Environment: Clean environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Fred
Age: Older pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Mary-Ann
Age: Young pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Maggie
Age: Older pig
Environment: Clean environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Romeo
Age: Young pig
Environment: Dirty environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Wilma
Age: Older pig
Environment: Dirty environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Juliet
Age: Young pig
Environment: Clean environment
Diet: Inappropriate diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Name: Susie
Age: Older pig
Environment: Dirty environment
Diet: Proper diet
Stress: Low stress level
Environment Temperature: Environment provides improper temperature regulation

Pig Illness Cards - suggestion: print on a thick colored paper

Pseudorabies or Aujeszky's Disease. This important disease of pigs is caused by a herpes virus. The virus can remain hidden in nerves of the pig in a carrier state for long periods of time and then be reactivated. This disease can affect both young and older pigs and periods of stress can activate the virus. The disease can be spread by nose-to-nose contact or can live a short time in manure on gates and boots. All those with high stress and dirty environments must proceed to the Veterinary Table.

Gastric Ulcers. Erosion and ulceration of the lining of the stomach is a common condition in growing pigs. It occurs around the area where the food pipe (esophagus) enters the stomach. Pigs with a balanced diet will not develop ulcers because a variety of nutrients will prevent the degradation of the stomach wall. Improper temperature regulation in the environment can contribute to the condition. All younger pigs with either an inappropriate diet or an environment that provides improper temperature regulation must proceed to the Veterinary Table.

Peritonitis. Peritonitis is inflammation of the peritoneum, the shiny membrane that covers all the internal surfaces in the abdomen. Peritonitis can affect both young and old pigs. Symptoms include abdominal pain and loss of condition or growth. Contributing factors include improper nutrition or stress. All pigs with an inappropriate diet or high stress level must proceed to the Veterinary Table.

Frostbite. In this condition, the skin and surface tissues are damaged by low temperatures. Symptoms include lesions that are bright red, swollen, or painful. Frostbite can affect pigs of any age if they are not provided with protection from cold temperatures. All pigs with improper temperature regulation in their environment must proceed to the Veterinary Table.

Swine Dysentery. This disease is caused by a bacterium. It is spread by many organisms, including flies, so keeping the environment clean is essential to preventing this disease. Clean environments will not attract as many disease-spreading organisms. Pigs with a dirty environment must proceed to the Veterinary Table.

Campylobacter. This is a bacterial infection that causes loss of body condition, dehydration, and sometimes diarrhea in piglets. This infection is found where pens are dirty and wet. All younger pigs with a dirty environment must proceed to the Veterinary Table.

Botulism. The bacteria that cause Botulism grow in decaying vegetable matter and produce a poison that will make pigs sick when they eat the material. Botulism can affect both young and old pigs. Symptoms include weakness and breathing difficulties. Keep the environment clean and free from old, decaying feed to prevent this condition. All those with a dirty environment must proceed to the Veterinary Table.

Pneumonia. This is an infection of the respiratory system that most commonly affects younger pigs. Symptoms include coughing, loss of condition, and fever. Poor environments and high stress levels can all contribute to the occurrence of the disease. Young pigs with a dirty environment and high stress level should proceed to the Veterinary Table.

Cold. Colds are caused by viruses and symptoms include coughing and nasal discharge. Pigs with a low stress level and a proper diet will be able to fight this disease off because their immune system will have enough nutrients and energy to fight the virus. All pigs with a high stress level or inappropriate diet must proceed to the Veterinary Table.

Eclampsia. This is a condition caused by low levels of calcium in the bloodstream. Symptoms include trembling, convulsions, and distress. Eclampsia does not affect younger pigs. Those with a proper diet will have enough calcium in their diet to prevent this disease. All older pigs with an improper diet must proceed to the Veterinary Table.

Heat stress. This is a condition caused by high temperatures and poor ventilation. Symptoms include panting, weakness, and vomiting. Those with proper environmental temperature will not succumb to this condition because they never become too hot. All pigs with improper environmental temperature must proceed to the Veterinary Table.



Pig Illness Cards, continued - suggestion: print on a thick colored paper

Obesity. This is a condition in which pigs become overweight from improper feeding methods. Obesity can lead to other health problems such as cardiac conditions and sterility. All pigs with an inappropriate diet must proceed to the Veterinary Table.

Foot and Mouth Disease (FMD). This disease causes small vesicles (blisters) to appear on a pig's nose, lips, and feet. As a result of these vesicles, your pig may begin to drool, champ its jaws, and display lameness. The vesicles burst within 24 hours and at that point become highly infectious, spreading rapidly. This disease can be transmitted from other pigs and from contaminated clothing and equipment. All those with a dirty environment must proceed to the Veterinary Table.

Veterinary Procedure Cards

The vet explains what you need to change about your pig's diet and gives you the proper medication. You comply and this cures your pig.

RETURN TO THE GAME.

The vet explains to you how to better regulate your pig's environmental temperature and gives you the proper medication. You comply and your pig is cured.

RETURN TO THE GAME.

The vet explains to you how to better regulate your pig's environmental temperature and gives you the proper medication. You do not comply and your pig is not cured.

STAY IN THE VETERINARY HOSPITAL.

The vet gives you the proper medication and you follow all of his or her advice perfectly so your pig is cured quickly.

RETURN TO THE GAME.

The vet explains what you need to change about your pig's diet and gives you the proper medication. You do not comply and your pig is not cured.

STAY IN THE VETERINARY HOSPITAL.

The vet explains what you need to change about your pig's hygiene and the cleanliness of its environment and in addition gives you the proper medication. You comply and your pig is cured.

RETURN TO THE GAME.

The vet explains what you need to change about your pig's hygiene and the cleanliness of its environment and gives you the proper medication. You do not comply and your pig is not cured.

STAY IN THE VETERINARY HOSPITAL.

The vet explains to you what you need to do to maintain a low stress level for your pig and gives you the proper medication. You comply and your pig is cured.

RETURN TO THE GAME.

The vet explains to you what you need to do to maintain a low stress level for your pig and gives you the proper medication. You do not comply and your pig is not cured.

STAY IN THE VETERINARY HOSPITAL.

HEALTH CARE LOG

Date: _____

Pig Name: _____

Breed: _____

Gender: _____

Age: _____

Feeding Behavior: _____

General Behavior: _____

Coat/Covering: _____

Skin: _____

Eyes: _____

Ears: _____

Movement: _____

Veterinary Updates: _____

Other: _____

ACTIVITY 3

Raising a Healthy Pig

BACKGROUND INFORMATION

The health of a pig depends on its owners. They are the ones who determine what a pig eats, the condition of its living environment, and many other factors that can promote good health or lead to illness. It is also the owner's responsibility to be observant and aware of a pig's health in order to prevent it from contracting diseases and illnesses. Disease can be caused by feeding a pig unhealthy or contaminated food or providing a dirty living environment, or it could be due to the pig's genetics. By feeding a pig healthy food, keeping its housing environment clean, and being aware of the pig's health and behavior, owners can hope to prevent the development of disease and provide comfort and good welfare.

Time Required

45–60 minutes

Concepts and Vocabulary

Disease, illness, health care monitoring

Life Skills

Teamwork, contributions to group effort, sharing, cooperation, communication, keeping records, critical thinking, problem solving, decision making

Subject Links

Science, Language Arts

State Content Standards

Science

- Sixth Grade:
 - » Investigation and Experimentation - 7d

Language Arts

- Fourth Grade
 - » Reading Comprehension – 2.3
 - » Listening and Speaking Strategies – 1.7
- Fifth Grade:
 - » Reading Comprehension – 2.3, 2.4
 - » Listening and Speaking Strategies – 1.5
- Sixth Grade:
 - » Listening and Speaking Strategies – 1.5
 - » Speaking Applications – 2.5b

Suggested Groupings

Five small groups

Materials Needed

(* = Materials provided in curriculum)

- * *Health Assessment Journal Entries* (5 Pigs)
- * *Pig Disease Descriptions*
- * *Health Assessment Summary*
- * *Health Assessment Report*
- Flipchart paper
- Markers or writing utensils

Getting Ready

- Divide the youth into small groups of 3 to 5.
- Provide each group with an adequate amount of flipchart paper and markers or writing utensils.
- Prepare one set of *Health Assessment Journal Entries* (one pig; five journal entries) for each group.
- Make one copy of the *Health Assessment Summary* for each group.
- Make enough copies of the *Pig Disease Information* so each group can have a set.
- **Note:** Do not distribute *Pig Disease Descriptions* worksheet until the end of the activity.
- Make one copy of the *Health Assessment Report* for each individual (Concept Application).

OPENING QUESTIONS

1. **What are some ways you can tell if someone is sick? What are some signs or symptoms that you might notice? Please describe.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you know about ways you get sick? What do you know about ways animals get sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

3. **Animals cannot speak, so they cannot tell us if they are not feeling well. What are some signs or symptoms that would help you to determine if an animal is sick? Please explain.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

PROCEDURE (EXPERIENCING)

- » **Volunteer Tip:** Set up the following scenario for the youth:

Each group represents the owners of a particular pig (a different pig for each group; provided by the volunteer). The groups are given daily journal entries of observations that have been made of their pigs. Based on the entries in their journals, the job of the youth is to look for important changes in the pig's health or behavior that might suggest a health concern.

- » **Volunteer Tip:** Provide each group the journal entries one day at a time. Do not give them the next day's entry until they have completed their work on the entry from the previous day.
1. Each group of pig owners is given Journal Entry 1 from their *Health Assessment Journals*. Have each group read their journal entry and record important facts from the journal entry on the *Health Assessment Summary*.
 2. Once the groups have completed recording and organizing the information from Journal Entry 1, take away Journal Entry 1 and provide them with Journal Entry 2. Again, ask them to read their journal entry and record important facts from the journal entry on the *Health Assessment Summary*.
 3. Continue this process one entry at a time for Journal Entry 3, Journal Entry 4, and Journal Entry 5.
 4. At this point, pass out copies of the *Pig Disease Descriptions* and have each group review their *Health*

Assessment Summary and determine which disease(s) their pig might have. Have them write their suggested diagnosis and the evidence that led them to their conclusion on their *Health Assessment Summary*, which they would provide their veterinarian.

SHARING, PROCESSING, AND GENERALIZING

Ask each group to share the results from their *Health Assessment Summary* and their suspected diagnosis. Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth. If necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. **When you were reading the journal entries, when did you begin thinking that it would be important to seek the care of a veterinarian?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
 - » **Volunteer Tip:** Have each group go back to their journal entries and ask them when they would have taken the pig to the veterinarian.
2. **What do you think might happen if you wait too long to seek veterinary care?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What might some of the consequences be if you don't monitor your pig's health on a daily basis?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **Based on your understanding, what are good signs to indicate that a pig is healthy?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Check the suspected diagnosis from each group against the answer key provided below. If there are any discrepancies, talk with the group about how they came up with their diagnosis and come to a conclusion based on their thoughts and ideas.

Swine Disease Diagnosis Key (Do Not Show This to Participating Youth)

- Fred – Mange Mites
- Lucy – Normal
- Harriet – Gastric Ulcers
- Rocky – Foot and Mouth Disease
- Herman – Porcine Reproductive and Respiratory Syndrome

CONCEPTS AND TERMS

At this point, volunteers need to ensure that the concept of health care monitoring has been introduced or discovered by the youth. (Note: The goal is to have the youth develop concepts through their own exploration and define terms using their own words.)

CONCEPT APPLICATION

- Have youth who own pigs write daily observations of their pigs on the *Health Assessment Report*. Have them share their entries with the other youth on a regular basis.
- Youth who do not own pigs can use the *Health Assessment Report* for a different type of domesticated animal (e.g., dog; cat) that they may have at home or that a friend or neighbor might have. Have them share these entries with other youth and compare these entries with those for a pig. How are the similar? How are they different?

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Health Assessment Journals

Print one-sided on heavy paper and cut out along dashed lines.



Journal A

Pig Name: Fred

Gender: Male

Age: 2 years

Journal A, Entry 1: Today Fred went to bathe in the sun around noon after playing with his favorite toy, a 14-lb red bowling ball. The temperature was 99°F. I played the radio very loud today while he was napping and lounging around. Fred did spend some time wallowing in the mud. He ate all of his alfalfa cubes and all of his raw vegetables. Since today was really hot, he drank water throughout the day. When I gave him a green apple as a snack, he oinked very loudly and happily took the apple from my hand.

Pig's Name: Fred, **Gender:** Male, **Age:** 2 years

Journal A, Entry 2: My friend from school, who also has a Yorkshire named Francine, was having a yard sale today. I stopped to see if there was anything worth buying. Then I saw the perfect gift for Fred, a bright green 15 lb bowling ball that used to belong to Francine. I paid for the bowling ball and surprised Fred later that day with his gift. Fred seemed very excited when he saw the bowling ball and played with the green bowling ball the entire day. While he was playing, I poured more water in his water bowl and added more ice because it was around 95°F today. Around 3 PM, I hosed him off with some water, and he then rolled around in the dirt. Fred took a nap, lying next to his new bowling ball. Looking at what he ate today, I saw he ate all of his alfalfa cubes except for one and he ate all of his raw vegetables.

Pig's Name: Fred, **Gender:** Male, **Age:** 2 years

Journal A, Entry 3: When I went to visit Fred today around 10 AM, he was completely covered in wet mud. He even brought the green bowling ball in the mud and was playing with it. He pushed his bowling ball out of the mud a few minutes later and plopped under a tree and took a nap. While taking a nap, he would occasionally scratch his skin with his hind legs and then go back to sleep. A plane flew over, making a really loud noise, causing him to wake up. Around 1:30 PM, the temperature was 98°F. When I checked on Fred, I noticed he ate all of his food. I later gave him a carrot as a treat. He ate half of his carrot. Fred did not finish his raw vegetables, leaving out a few leaves of romaine lettuce. When I was about to go into the house, I noticed that Fred was rolling around on his back on the gravel pathway.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.

Pig's Name: Fred, **Gender:** Male, **Age:** 2 years

Journal A, Entry 4: Today, I didn't see Fred playing with his bowling ball. Instead, he seemed to spend the majority of his time next to the tree, rubbing against it. He would occasionally wallow in the mud, but immediately afterwards he would go back to the tree and scratch himself against it. It was very hot today, over 100 °F! So I took out the inflatable pool and filled it with cold water. Fred immediately went into the pool and splashed around in it, and eventually took a nap in the pool. I gave him a pear for a treat, and he immediately ate it. He drank some water and then headed back to the tree.

Pig's Name: Fred, **Gender:** Male, **Age:** 2 years

Journal A, Entry 5: Today when I went to check on Fred, he was lying next to the tree but wasn't scratching against it. When I came closer to Fred, I noticed his skin was red and raw. Patches of hair were missing near his rump and he had many open cuts around the sides of his body. I tried to get him to get up but he wouldn't move. Then I noticed that he had small tiny bumps on his legs. It was still over 100 °F so I filled up the inflatable pool again, but he wouldn't go in it. I noticed that he barely ate any of his food, so I fed him an apple as a snack and he slowly ate it. All of a sudden, he got up and started scratching against the tree again, taking off more skin.



Journal B

Pig Name: Lucy

Gender: Female

Age: 8 months

Journal B, Entry 1: Today, Lucy was very playful and active. She ate all of the cucumbers, lettuce, cabbage, spinach, and peppers I fed her. After eating the vegetables, I feed her an apple, and then she walked out to the backyard to take a nap. I noticed her water bowl was low, so I filled it back up. The temperature today was hot, but Lucy was acting her normal self. I heard snorting and sniffing noises as Lucy walked around the house and into the backyard area.

Pig Name: Lucy, **Gender:** Female, **Age:** 8 months

Journal B, Entry 2: Today while eating, Lucy would eat some of her pig food, take a drink of water, then eat some more again. She did this throughout her entire meal. Later in the day, I fed Lucy some apples and bananas as a snack. She ate all the apples but didn't eat any of the bananas. In the evening, Dad was making some dinner and accidentally dropped a piece of raw meat on the floor. Before he could pick it up from the floor, Lucy runs into the kitchen and snatches the meat off the floor and eats it. For the rest of the night, Lucy was very happy, running around and playing with her toys. Lucy fell asleep next to the couch that night.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.

Pig Name: Lucy, **Gender:** Female, **Age:** 8 months

Journal B, Entry 3: Today was a very hot day, so I decided to fill the kiddie pool with cold water for Lucy to wade around in. Lucy had a great time playing in the kiddie pool. She urinated in the pool so I had to drain it and re-fill it again. When I went to check on her food later that day, I noticed that she ate all of her vegetables except for the cabbage. I tried to get her to eat the cabbage but she refused to eat it so I threw it away. While playing around with Lucy, I noticed many flies and insects hovering around her, so that was when I decided it was a good time to go inside the house.

Pig Name: Lucy, **Gender:** Female, **Age:** 8 months

Journal B, Entry 5: I noticed lots of hair around the house and realized that Lucy was shedding. I did a really good sweep through and around the house to try to get all of the hair. Later that afternoon, I helped my mom plant some daffodils. When I went to put the gardening tools back in the shed, Lucy snuck over to the garden and ate five of the daffodils. Luckily I had some extra daffodils, so I replanted them. Today was cooler than the previous days so I decided to remove the wading pool. Before I could empty it, Lucy jumped in the pool and started playing in it. She looked so happy so I decided not to remove the pool. Lucy ate all her food today. For the rest of the afternoon, Lucy took a nap under a tree.

Pig Name: Lucy, **Gender:** Female, **Age:** 8 months

Journal B, Entry 4: Today I got home late from my friend's house so I was late feeding Lucy. Lucy was sitting next to her food bowl squealing at me when I came to feed her. Once I put the food in her food bowl, she stopped squealing and quickly ate her food. She ate all of her food in record time, less than 10 minutes! After eating her food, she started to squeal again. She had enough food so I ignored her, and she eventually stopped. Later on that night, I fed her a snack, apologizing to her for not feeding her on time today. While I was reading a book, Lucy sat next to me and started nudging at my leg, a sign that she wanted to be petted. I started to pet her and noticed that she had less hair than in the beginning of summer.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.



Journal C

Pig Name: Harriet

Gender: Female

Age: 3 years

Journal C, Entry 1: Today I purchased a Hampshire pig and named her Harriet. I brought her home today, transporting her to my house in a small crate. I heard her squeal throughout the very long trip home. Once I got home, I introduced her to her new living space in the house and the backyard where she could roam. I filled up her food bowl with pig food from the store and filled her water bowl with clean, cold water. She didn't eat or drink immediately, sniffing around her new home and getting used to the sights and smells. After eating all of the food and drinking all of the water, Harriet went to her corner of the house and fell asleep.

Pig Name: Harriet, **Gender:** Female, **Age:** 3 years

Journal C, Entry 2: Harriet seemed a little off today. I don't know what it was but she just didn't look well. Her skin looked paler than yesterday and she seemed very tired and lazy. She didn't explore her new home as much today. I checked her food bowl and noticed that she didn't eat all of her food. I checked her water bowl and realized I had forgotten to refill it since yesterday. I quickly refilled the water bowl and Harriet immediately drank from it. I tried to get Harriet to eat more of her food but she refused. She walked outside to the backyard and took a nap under a tree.

Pig Name: Harriet, **Gender:** Female, **Age:** 3 years

Journal C, Entry 3: Harriet does not look well today. Her skin is paler and now she has started grinding her teeth. I checked her temperature today but it seemed normal. I noticed she was having a difficult time breathing. I checked the thermometer inside the house and noticed it was two degrees warmer than yesterday. I thought Harriet might feel better if she went outside so I slowly got her to go outside. Once she got to the grass, she immediately started eating some grass and plopped down. I wanted to move her under the shade but she wouldn't move. I looked at her food bowl and noticed she ate very little of her pig food. I changed and refilled her water.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.

Pig Name: Harriet, **Gender:** Female, **Age:** 3 years

Journal C, Entry 4: Today Harriet started to vomit. The vomit was yellow. I could tell that Harriet had lost some weight since I brought her home a few days ago. I checked her food bowl and she still didn't eat much, but I noticed she was drinking water. I checked the thermometer in the house and it was three degrees cooler than yesterday. Outside, there were large clouds in the sky and there were more bees buzzing around in the backyard than before. Harriet didn't look like she was getting better. She was extremely tired and lazy, not moving from her spot the entire day.

Pig Name: Harriet, **Gender:** Female, **Age:** 3 years

Journal C, Entry 5: Today, I noticed that Harriet's droppings were a dark, black-red color. Harriet still had not eaten much of her food, only eating a few bites. She has now stopped drinking her water. She is not active and mainly lies down because she is very tired. She continuously vomits throughout the day and still seems to have a hard time breathing. She is still grinding her teeth and looks very thin. I checked her temperature but it still appears to be normal. Harriet's skin is still very pale.



Journal D

Pig Name: Rocky

Gender: Male

Age: 4 years

Journal D, Entry 1: Today is the day before the big pig show for Rocky. Rocky and I have been preparing for this show for the past month, and we are both really excited for it. Rocky spent a good portion of his day in the mud pool, wallowing and playing in the mud. He ate all of his food and drank all of his water, so I had to refill his water bowl. In the early evening, I gave him a bath and a good scrub down. I did one last examination of him, and he looked great. His eyes, nose, ears, and mouth were all clear and clean. His skin and coat looked smooth and shiny and his hooves looked clean. I gave him a small treat before heading off to bed.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.

Pig Name: Rocky, **Gender:** Male, **Age:** 4 years

Journal D, Entry 2: Today is the big day! Rocky and I got up early and headed off to the fair. When we got there, there were already a lot of people there. I signed in and got information about the day and where to house Rocky. While walking to Rocky's pen, Rocky accidentally stepped and fell in a pile of poop. Luckily I still had a few hours before showing Rocky so we quickly walked over to the wash area. I forgot to bring my brush so I asked another kid if I could borrow her brush. I gave Rocky a good scrub down and thanked the girl for letting me borrow the brush. The show went really well. Rocky placed first! We got home late and I gave Rocky his favorite treat before going to bed.

Pig Name: Rocky, **Gender:** Male, **Age:** 4 years

Journal D, Entry 4: Today, I noticed that the blisters had popped around his face and legs. Rocky didn't seem like his normal self. He was not very active and spent most of the day lying on the grass under the tree. When I put food in his food bowl, it took him a really long time to reach the bowl. It looked like he was in pain while walking. He didn't even stand when he ate. He just plopped in front of the food bowl and ate from the ground. While he was feeding, I did a quick examination of Rocky. More blisters showed up around his hooves and his nose. After he was done eating, it looked like he was drooling a bit. Then he slowly walked back to the front porch and fell asleep on the ground.

Pig Name: Rocky, **Gender:** Male, **Age:** 4 years

Journal D, Entry 3: I went to check up on Rocky and noticed that he had small little bumps or blisters around his legs and mouth. However, it didn't seem to affect his daily activity. He still ate very well when I fed him in the afternoon and he drank a lot of his water. He wallowed in the mud for a good part of the afternoon and then took a nap under a tree. When it was time for dinner, I noticed that he seemed to walk a little slower to his food dish. I just figured he was still a little tired from his nap.

Pig Name: Rocky, **Gender:** Male, **Age:** 4 years

Journal D, Entry 5: Rocky looked really bad today. When I came to check up on Rocky, he did not move to greet me. I wanted to examine the blisters around his nose and hooves. The blisters around his nose popped, and when I tried to get him up to look at his hooves, he squealed loudly and dropped to the floor. I didn't want to hurt him so I decided not to move him. I noticed he didn't eat any of his food or drink any of his water from the morning. So I moved his food and water bowl to right in front of him and hand fed him the food. He only ate a little bit and had a hard time drinking because he couldn't get up. Rocky seemed really tired and fell asleep immediately afterwards.

Health Assessment Journals, continued

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Journal E

Pig Name: Herman

Gender: Male

Age: 5 years

Journal E, Entry 1: Herman was really energetic today. When I came to give him food and clean his living area, he came up to me very excited and nudged his head against my leg and started to pull on my pant leg. This was his way of telling me that he was happy to see me and that he wanted a treat. So I gave him an apple, and he happily chewed on it while I cleaned his bedding. After feeding him and changing his bedding, I sat under the tree to take a nap. Herman loves taking naps with me so he walked over and slept next to me.

Pig Name: Herman, **Gender:** Male, **Age:** 5 years

Journal E, Entry 2: When I went to feed Herman today, he didn't greet me like he usually does. Curious, I went looking for him and I saw him rooting near the fence. He dug a big hole and was practically halfway under the fence! On the other side of the fence was a pond that Herman has always been fascinated with. I quickly got him out of the fence and refilled the hole with soil. Afraid that Herman might have hurt himself while digging the hole, I did a quick look over of him. I didn't see any scratches on his body and his eyes and nose looked clear. Going back to my chores, I saw that his bedding looked clean so I didn't change it. I noticed that he ate all of his food and drank most of his water, so I refilled them both.

Pig Name: Herman, **Gender:** Male, **Age:** 5 years

Journal E, Entry 3: Today when I went to check up on Herman, he was nowhere to be found. When I checked the fence, I saw that the hole reappeared but was now bigger. I then heard some splashing and knew at once that Herman got to the pond. I ran over to the pond and saw Herman happily splashing and wallowing in the muddy pond. There were many birds in the pond and most of them either flew off or got out of the pond. It took me a while to get him out of the pond but eventually I got him out. I now put bricks in front and in back of the hole so Herman can't get through.

Health Assessment Journals, continued

Print one-sided on heavy paper and cut out along dashed lines.

Pig Name: Herman, **Gender:** Male, **Age:** 5 years

Journal E, Entry 4: After school, I immediately went to check on Herman and the fence. I saw that the fence was still intact but when I saw Herman, he was acting a bit odd. He didn't seem his usual excited self. He was lying on his side when I came to see him but didn't get up to greet me. I looked at his food bowl and he had eaten most of his food. His water bowl was a little low so I refilled it. When I was cleaning his living area, Herman finally got up and started following me. I would occasionally hear him cough while I was working. Looking tired, he found some shade next to a bale of hay and took a nap for the rest of the afternoon.

Pig Name: Herman, **Gender:** Male, **Age:** 5 years

Journal E, Entry 5: Herman was acting especially odd today. I heard him constantly cough when I went to check on him. He didn't get up at all the entire time I was with him. He just lay on his bedding. Worried, I checked his face and body for anything unusual. His eyes and nose looked okay. His ears, however, looked a little blue. The entire time I was examining him, he was coughing. I gave him some water to help with the cough but it didn't seem to make it better.

Pig Disease Descriptions

Mange Mites: Mange is a disease of the skin caused by two types of mite (parasites). It is the most common disease among pigs. It is uncomfortable and irritating for pigs, causing them to rub their bodies against each other or against anything they can find, damaging the skin. Pigs can get mange mites if they are in close contact with infested pigs or are in contact with recently contaminated surfaces. Signs and symptoms include:

- Scratching
- Ear wax buildup, sometimes forming plaques
- Irritation on the skin from rubbing or scratching
- Poor growth
- Tiny, red, pimple-like bumps on the skin
- Lesions, scabs, hair loss, abrasions all over a pig's body

The best method of prevention is excellent management of pigs and housing. The strict practice of making sure that new pigs are mange-mite-free can prevent an entire group of pigs from getting infected. The herd can be sprayed periodically with an oily liquid containing phosmet, which kills and prevents the spread of mange mites. There are no vaccines that can prevent mange mites. Treating the disease is costly: the infected pigs would need repeated medical treatments. If anything looks abnormal—excessive scratching, for example—seek veterinary advice immediately!

Gastric Ulcer: Gastric ulcers cause damage to the stomach wall. They are less common in piglets, but more common for adult pigs. The ulcers are located around where the food pipe (esophagus) connects to the stomach. These ulcers may bleed and cause the pig to digest its own blood. Severe cases can lead to death. The real cause of these ulcers is unknown, but it is most likely they are caused by the diet. Ulcers can

occur if too little protein, fiber, vitamin E, and zinc are in the diet. Ulcers can also occur if there is too much wheat, iron, copper, calcium, fat, and milk in the diet. In addition, feeding finely ground meal or pellets, feeding cereals that are high in moisture, or having an irregular feeding schedule can lead to ulcers. The pig's surrounding environment is also important. Changes in temperature, lack of food, water, or space, transportation, or pneumonia can also cause the development of gastric ulcers. Symptoms of a pig that might have gastric ulcers include:

- Pale skin
- Breathlessness
- Tiredness or weakness
- Vomiting
- Grinding teeth
- Dark-colored droppings
- Weight loss
- Loss of appetite

With proper husbandry, gastric ulcers can be prevented. Have a clean and adequate living space for your pig. Feed it a regular and balanced diet. Increase straw or hay in the diet. Do not feed finely ground foods. Also try to reduce the stress in your pig's environment. If your pig exhibits any of the symptoms above, seek veterinary advice immediately!

Peritonitis: Peritonitis affects the thin layer of tissue that covers the abdomen, causing it to become inflamed. In piglets it can cause death; in adult pigs it can produce many of the same symptoms as gastric ulcers. The causes of peritonitis include mating, gastric ulcers, injury to the abdomen or liver, and bacteria or parasite infection. Symptoms of this disease include:

- Loss of appetite
- Increased or normal temperature
- Loss of weight
- Laziness or tiredness
- Pale skin
- Discharge from the vulva while mating

Ways to prevent peritonitis from occurring include keeping the pig's living space clean, monitoring a pig's health during mating times, and keeping the pig safe from injury. If you observe any of these changes to your pig's appearance or behavior, seek veterinary help immediately!

Porcine Reproductive and Respiratory Syndrome (PRRS, also known as mystery swine disease, blue ear disease): This syndrome is caused by a virus that attacks and kills the defense cells (macrophages) in the lungs. This impairs the pig's immunity and allows more bacteria and viruses to invade and affect the pig. Factors that contribute to this disease include contact with infected pigs (via nasal secretions, saliva, urine, feces, etc.), airborne transmission, and contact with contaminated clothing, shoes, and equipment. It can even be transmitted through birds, particularly the mallard duck. Signs and symptoms include:

- Respiratory problems
- Continuous coughing
- Discoloration of the ears (turning a blue color)
- Decreased appetite within a one- to two-week period
- May have an increase in temperature
- Lethargy

A major way to prevent pigs from becoming infected with PRRS is to prevent the virus from entering your farm. That

means practicing good sanitation and having regular animal check-ups so as to keep infected pigs from infecting others in the herd. Unfortunately, there is no effective treatment program for this disease. For general disease detection (not just for PRRS detection), you should be on the lookout for these symptoms on a regular basis. If any of these symptoms occurs, seek veterinary attention immediately!

Foot and Mouth Disease (FMD): This disease is very devastating to producers because it is so contagious and spreads so rapidly among pigs. The disease produces small vesicles (little blisters) on a pig's nose, lips, and feet. As a result of these vesicles, your pig may begin to drool, clamp its jaws, and display lameness. The vesicles burst within 24 hours. FMD can be transmitted from other pigs and on contaminated clothing and equipment. Thus, it is important to observe good sanitation practices. For example, consider having only one exit and entrance to your pigs' area and keep them away from other animals, as they may also contribute to this disease. Also disinfect your clothing and shoes each time you come into contact with your pigs and disinfect any equipment (wheels, e.g.). There is no effective treatment for this disease; pigs found with this disease should be destroyed. Signs and symptoms include:

- Sudden lameness
- Blisters on hoof, snout, and lips
- Painful to walk (i.e., squeals when walking, preference to lie down)

Sudden lameness and pain when walking are quite obvious in a pig. If you find a pig with these signs it should be removed immediately from the rest of your herd. Upon removing it, check closely for vesicles (blisters), since they are very small. Because there is no cure and because it is highly infectious, pigs found with these vesicles should immediately be destroyed—but make sure to seek veterinary advice before taking any action.

Swine Dysentery: This disease is caused by bacteria and affects a pig's intestines. It leads to diarrhea, poor growth, and death. Since it affects growth, this disease is expected to show up in growing pigs, although it can also appear in full-grown pigs. A common means of transmission for this disease is contact with an infected pig's feces. Rodents can also be carriers of the disease. Prevention is also a good way to keep this disease from attacking your pigs. Good sanitation practices are important. Swine dysentery can be treated with antibiotics. Signs and symptoms include:

- Diarrhea that is porridge-like and khaki to brown in color
- Reduced appetite, which will affect growth
- Animal seems depressed

Watching your pig carefully is important because you will need to see which feces belong to which pig if you have more than one pig. If your pig's behavior seems abnormal, seek veterinary advice.

Greasy Pig Skin Disease: This disease is probably the most common skin disease in pigs and is caused by bacteria. It is typically seen in weaned pigs and is visible as a black, greasy, hairy appearance. The consequences are most serious in younger pigs. It can occur in suckling piglets as young as 3–4 days, and can be lethal at that age. Symptoms include:

- Lesions on the skin, particularly behind the face and eyes
- Brown areas throughout the skin where the infection is located
- Wrinkled or flaking skin in large areas
- Dehydration
- Black and greasy skin

Proper husbandry and housing can help prevent this disease. Some examples include installing flooring that prevents abrasions, placing equipment such as feeding troughs in areas or installing them in ways that make it less likely your pig will

injure itself, and properly clipping your pig's teeth at birth. If anything along these lines looks abnormal in your pig, seek veterinary advice immediately!

Swine Influenza: This is a common problem throughout pig production worldwide. It is caused by a virus and spreads very quickly. Many pigs can become infected with the disease, but few die from the disease. It can be spread easily via pig-to-pig contact and bird and human contact. The clinical signs will vary depending on the type of pig and the strength of its immune system. Symptoms include:

- Flu-like symptoms
- Lack of appetite
- Coughing
- Discharge from the eyes or nose
- Spasms
- Fever
- Sluggishness

If a pig is infected, separate it from the rest of the herd, give it antibiotics to prevent secondary bacterial infections (antibiotics have no effect on viruses) and reduce any type of stress it may feel. Disease prevention steps include reducing movement of the herd and keeping a clean and sanitary facility. Consider vaccinating pigs against swine influenza. If you see any of the symptoms above in your pig, seek veterinary advice immediately!

HEALTH ASSESSMENT SUMMARY

Pig Name: _____

Breed: _____

Gender: _____

Age: _____

Feeding Behavior: _____

General Symptoms

Is there anything you notice that you should be concerned about?

Journal Entry 1: _____

Journal Entry 2: _____

Journal Entry 3: _____

Journal Entry 4: _____

Journal Entry 5: _____

Suspected Diagnosis: _____

(Use the *Pig Disease Descriptions*)

Observations

1. Explain which symptoms from the above journal helped you indicate a problem, and why. _____

2. What other observations do you think might be important?

3. Why do you think recording daily observations of your pig would be helpful in monitoring your pig's health?

HEALTH ASSESSMENT REPORT

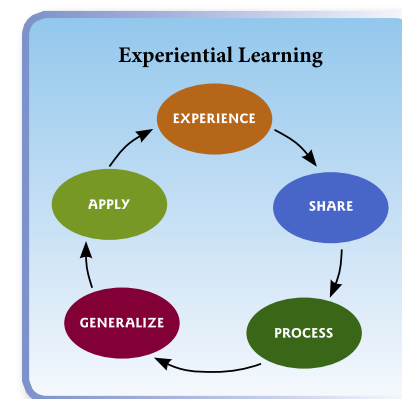
Day	Activity	Behavior	Housing	Other (specify):	Other:	Other:
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						

GLOSSARY

- **Balanced diet:** Eating the right types of food in the right amounts to maintain a healthy body.
- **Basic nutrients:** Substances that help maintain a healthy body. These include carbohydrates, proteins, vitamins and minerals.
- **Care:** Having concern for someone or something, which leads to tending or overseeing that person or thing.
- **Competition:** A struggle between individuals for food, space, and other important requirements for survival.
- **Direct contact:** Physical contact between an ill person or animal and a healthy person or animal.
- **Disease:** An abnormal condition that affects the normal function and health of an organism, decreasing the health of that organism.
- **Disease prevention:** Taking the necessary steps to prevent humans and/or animals from getting sick.
- **Disease transmission:** To transfer a disease from one person or animal to another.
- **Dominant:** Having influence, control, and authority over others.
- **Environmental needs of humans and swine:** The things that both humans and swine need in their home or living area to help them survive and live comfortably.
- **Essential nutrients:** Nutrients that humans and animals must have to live and function properly.
- **Germ:** A microorganism that has the potential to cause diseases.
- **Health care monitoring:** Closely observing an animal's health, behavior and activity everyday to determine what is normal or abnormal about your animal.
- **Illness:** Being unhealthy or in poor health.
- **Indirect contact:** When an uninfected person or animal touches the contaminated surface (e.g., table top) of an inanimate object (e.g., food dish).
- **Life stages of swine:** Swine are categorized in different stages of development or life stages. Swine at each life stage have different nutritional requirements to grow and stay healthy.
- **Olfactory receptors:** Structures that aid with an individual's sense of smell. The more receptors you have, the better your sense of smell.
- **Prenasal bone:** A bone found in the snouts of pigs. This bone allows them to use their nose to dig for food in the ground.
- **Preventative health care:** The act of maintaining the health of humans and animals by preventing them from catching an illness or disease.
- **Responsibility:** Being accountable for one's actions or behaviors.
- **Rooting:** The act of pulling out or removing items from under the ground.
- **Rooting-disk:** A disk found in the snout of pigs that is very sensitive, allowing them to explore the surrounding environment.
- **Social dominance:** In a group, there are individuals that lead and have authority over others in the group.
- **Social hierarchy:** A system where individuals are ranked from top to bottom according to authority or importance.
- **Social order:** A system in place that keeps a group stable and functioning.
- **Subordinate:** Belonging to a lower level or rank in a group.
- **Tactile receptors:** Structures that aid with someone or something's ability to feel and touch items in the environment. The more receptors you have, the better your sense of touch.
- **Wallowing:** To roll around in the mud.

APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.



For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning website, <http://www.experientiallearning.ucdavis.edu/default.shtml>.

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