

# UC Agriculture & Natural Resources

## 4-H, Youth and Family (includes home livestock)

### Title

Swine - From the Animal's Point of View, 2: Pig Housing

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# SWINE : *From the Animal's Point of View*

2

## SUBJECT OVERVIEW AND BACKGROUND INFORMATION

Pigs are unique in the sense that they are the only large mammals that can be found on every continent of the world, in a variety of sizes and breeds, and that they are both wild and domesticated. Pigs have keen senses and instincts; furthermore, they are intelligent, clean, and easily trained.

Despite differences in breeds and in the places they live, all pigs share a number of traits and behaviors in common. Pigs wallow as a means of keeping cool and protecting their skin, they explore their environment by digging and rooting in the ground, and they are very social animals.

Wild pigs live in forests, meadows, and swamps and have adapted to survive in their environment by becoming good swimmers, nocturnal (nighttime) hunters/foragers, and by establishing social hierarchies within their groups.

The domestication of pigs, which began around 10,000 years ago, involves a more controlled environment where the animals rely on a person to care for them by providing appropriate food, water, and shelter. However, domesticated pigs exhibit wallowing and rooting behaviors like their wild relatives and these behaviors should be considered when creating pig housing areas.

*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.*

## Pig Housing: *Designing a Swine Habitat*



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To take proper care of swine you need to provide a clean, dry housing space that allows access to both sun and shade, plenty of clean water, areas to root and wallow, and the company of other pigs. Raising pigs may be costly, but with a basic knowledge of pigs' needs and an efficient budgeting plan, you can find the experience fun and rewarding.

## Concepts and Vocabulary

**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.

## Life Skills

Communication, decision making, empathy, keeping records, organizing, planning/organizing, teamwork, wise use of resources.

## Subject Links

Science, Language Arts, Math

## Overview of Activities

All animals have certain needs in common, such as food, water, shelter, and space. As a lead-in to discovering the needs of pigs, youth will use the first activity to discover what their own needs are by thinking about their own homes and working out what it is that they need in order to live. They will then use this as reference information as they try to work out what they think a swine would need.

In the second activity, the youth will be given a set budget to cover the cost of the items they will need to establish a home for a pig. By “going shopping” for the items they need to build and furnish their pig’s home, they will learn to make buying decisions based upon a budget.

The environmental needs of pigs are not constant. Different ecological factors and geographical locations can bring about different specific needs. The youth will be given various scenarios for which they will need to adjust their swine environment.

Finally, to apply their newly gained knowledge, the youth will use the shopping list they drew up in their activity to budget for the materials needed to create and maintain an environment suitable for their swine.

## REFERENCES

- Dewey, T., and J. Hruby. 2002. *Sus scrofa*: Wild boar. Animal Diversity Web. [http://animaldiversity.ummz.umich.edu/site/accounts/information/Sus\\_scrofa.html](http://animaldiversity.ummz.umich.edu/site/accounts/information/Sus_scrofa.html).
- Grandin, T. 2009. Comfortable quarters for pigs in research institutions. Animal Welfare Institute. <http://awionline.org/pubs/cq02/Cq-pigs.html>.
- University of Nebraska Cooperative Extension. 1995. Breeds of livestock. [www.ansi.okstate.edu/breeds/swine/](http://www.ansi.okstate.edu/breeds/swine/).
- Mississippi State University. n.d. Wild pig info. <http://wildpiginfo.msstate.edu/history-wild-pigs.html>.
- University of Nebraska Cooperative Extension in Lancaster County. n.d. Did you guess it?? [http://lancaster.unl.edu/feature/guess8\\_7.htm](http://lancaster.unl.edu/feature/guess8_7.htm).

# FACTS ABOUT PIGS

## PIG HOUSING

When selecting or designing housing for pigs, it is important to keep their natural behaviors in mind. Ideally, any housing for pigs should allow for social interaction and provide opportunities for rooting, wallowing, and enrichment.

## SOCIAL GROUPINGS

Pigs are highly social. Therefore, it is important to house your pig in a compatible social group. Social housing can benefit pigs by giving them opportunities to express their social needs and at the same time making them less susceptible to stress.

Pigs, like other social animals, develop dominant-subordinate relationships within their social groups. If the social group is changed by the removal or replacement of an adult group member, these relationships may be disrupted and fighting may result, so it is important to avoid changes in social groupings as much as possible.

## ENCLOSURE

Temperature regulation is very important in pig housing. The temperature of the housing area should be at the pig's thermoneutral zone, which varies depending of the life stage of the pig. During cold weather, pigs should be warm and comfortable in their housing. They should have enough dry bedding and insulation to keep them warm. During warm

weather, pigs should be able to keep cool and not overheat. You can accomplish this by installing misters or fans in the housing area to keep it cool and well ventilated. Also, if you allow pigs to wallow they will help keep themselves cool.

There are three basic types of housing enclosure for pigs. The first option is to house pigs indoors, which gives you reasonable control over their environment, easy clean up and disinfection, and a better ability to manage disease outbreaks. There are drawbacks, however: the indoor option can be expensive, pigs kept indoors rely solely on their caretaker for food and water, and there is a potential for increased incidence of disease if there is a large packing density. Each adult pig should be allowed a minimum space of 2.4 to 3.6 m<sup>2</sup> if you want to avoid aggression between pigs. Enough space and visual barriers should be provided to minimize any aggression that may result from the pigs' being confined. In general, the more space a pig has, the better its behavior will be.

Another housing option is hoop housing. This is usually used for gestation and grow-finish pigs. The benefits of this type of housing are that it can be used for other purposes other than housing swine and that it allows the caretaker a reasonable amount of control of the pigs' environment. However, it does require a lot of bedding, the housing is hard to clean and sanitize, temperature regulation is more difficult, and handling pigs takes more time than in indoor housing.

The last basic approach to pig housing is to keep the pigs outside on pasture. All pigs at all different life stages can be housed at pasture. This approach provides enough room for the pigs to perform their natural behaviors and reduces the potential for disease transmission because pigs are more spread out. It also provides pigs with exercise and high-quality forage. The problem with this type of housing is that the caretaker has only minimal control of the pigs' environment, the housing is difficult to clean and sanitize, and it is harder to protect the pigs from predators, wild animals, and diseases. It also takes more time to handle the pigs than in indoor housing.

There are pros and cons to each type of housing. You may find that by combining two or more types of housing, you can provide the greatest benefit to the pigs while minimizing the risks associated with each individual type of housing.

## ENRICHMENT

Pigs spend a lot of their time foraging and eating. They have a strong rooting behavior, so it is important to provide areas where they can root. If no area is provided, they will redirect this behavior toward substitute objects, such as other pigs.

Wallowing is another important behavior for pigs. Pigs lack sweat glands, so the main method they have for cooling themselves down is to wallow in mud. If their housing facility does not provide misters or some other way to facilitate

cooling, you should make sure to provide a wallowing pool. The mud protects their skin from being sunburned and also protects the pigs from insects and other pests.

Pigs are very intelligent creatures and need mental stimulation to prevent boredom and frustration, so it is important that you provide them with enrichment in the form of toys. The availability of enrichment will make the animal more calm and less likely to be startled by sudden noises or new people. This will also help prevent them from performing certain stereotypical behaviors (e.g., pacing in their enclosure) or antisocial activities (e.g., chewing the ears and tails of pen mates).

Pigs are very sensitive animals and require careful attention to minimize any stress. It is important that caretakers provide their pigs with positive human contact through regular interaction with their pigs. This will make the pigs calmer around humans and less stressed during otherwise-unpleasant procedures.

## 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](http://www.vetmed.ucdavis.edu/vetext/local-assets/pdfs/pdfs_animal_welfare/swinecareprax.pdf).
- McGlone, J. et al. 2010. Guide for the care and use of agricultural animals in research and teaching, 3rd. ed. Federation of Animal Science Societies. [www.fass.org](http://www.fass.org).

## ACTIVITY 1

### *My Home, a Pig's Home*

#### BACKGROUND INFORMATION

There are certain things in our environment that we either need or want. Some things are essential, such as food, water, and shelter, and without these we cannot survive. However, there are other, supplementary things that we do not strictly need to live, but that enrich our lives—such as books, music, and play structures. By comparing humans and swine, we can see many similarities and differences in our environments relative to what is essential and what is supplementary.

#### Time Required

40 minutes.

#### Concepts and Vocabulary

Environmental needs of humans and swine.

#### Life Skills

Communication, decision making, empathy, organizing.

#### Subject Links

Science, Language Arts

#### State Content Standards

*Science*

- Sixth Grade:

- » Investigation and Experimentation – 7d

#### *Language Arts*

- Fourth Grade:
  - » Listening and Speaking Strategies – 1.1, 1.8, 2.2b
- Fifth Grade:
  - » Listening and Speaking Strategies – 1.5

#### Suggested Grouping

Groups of 3 to 4.

#### Materials Needed for Each Group

- Flip chart paper
- Writing instruments (pencils, pens, markers)

#### Getting Ready

- Divide the youth into groups of 3 to 4.
- Distribute the materials.

#### OPENING QUESTIONS

1. **Think about where you live. What are some things that you need in your home in order to survive? Please describe.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

2. **What are some things in your home that improve the quality of your life?** Ask the youth to share their ideas verbally or write their responses on the paper provided.
3. **What are some things in your home that are really important to you? Why are these your favorite things?** Ask the youth to explain their ideas verbally or write their thoughts on the paper provided.

#### PROCEDURE (EXPERIENCING): PART I

1. Ask the youth to work together to make a list of things they need in their homes, including all of the things in their house or community that they need in order to live safely and comfortably and to be healthy.
2. Then have the youth organize these items into categories:
  - » Social needs (friends, family, teachers, etc.)
  - » Physical needs (shelter, safety, health, comfort, etc.)
  - » Behavioral needs (toys, activities, exercise, etc.)
  - » Other needs

## SHARING, PROCESSING, AND GENERALIZING: PART I

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:

- Ask each group to share their list, explaining what they have described as their needs and how they chose to categorize these needs. Are there similarities between the lists? Differences? Explain.

## PROCEDURE (EXPERIENCING): PART II

1. On another sheet of flip chart paper, have the youth list all of the things they think a pig needs.
  - » **Volunteer Note:** Remind the youth to think of their own needs as they work this out.
2. Then have the youth organize these items into categories:
  - » Physical needs (shelter, safety, health, comfort, etc.)
  - » Social needs (friends, family, teachers, etc.)
  - » Behavioral needs (toys, activities, exercise, etc.)
  - » Other needs

## SHARING, PROCESSING, AND GENERALIZING: PART II

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:

- Ask each group to share their list and to explain what they have described as a pig's needs and how they chose to categorize these needs. Are there similarities between the different groups' lists? Differences? Explain.

- Ask the groups to compare and contrast the lists of human needs and the lists of pigs' needs. Encourage them to discuss how the needs of humans are similar to or different from the needs of pigs.

## CONCEPTS AND TERMS

At this point, volunteers need to ensure that the concept of environmental needs of humans and swine have been introduced or discovered by the youth. (**Note:** The goal is to get the youth to develop these concepts through their own exploration and to have them define terms using their own words.) Youth should also note that both humans and swine have a variety of types of needs, including physical, social, and behavioral needs.

## CONCEPT APPLICATION

Ask the youth to do each of the following:

- Observe and compare different types of homes in your community. Some people live in single-standing homes, some people live in duplexes or townhouses, and other people live in apartments. How are these homes similar to each other? How are they different?
- Observe the homes of wild animals and compare them to those of domesticated animals. How does each type of animal meet its needs?

## REFERENCES

- Grandin, T. 2009. Comfortable quarters for pigs in research institutions. Animal Welfare Institute.  
<http://awionline.org/pubs/cq02/Cq-pigs.html>.



## ACTIVITY 2

### *Designing a Pig's Environment*

#### BACKGROUND INFORMATION

In the wild, pigs are able to survive by living in small maternal-based groups. A wild sow that is about to give birth (to farrow) will leave the group and create a shelter in which to farrow. She will build a nest by rooting a shallow hole and filling it with branches and soft material. In contrast, a domesticated pig relies on its owner to provide it with the best housing situation and enrichment that will enable it to live a happy, comfortable life. There are some things that a pig—whether wild or domesticated—needs in its environment. These things may address physical needs, social needs, or behavioral needs, or any combination of those.

#### Time Required

1 hour.

#### Concepts and Vocabulary

Environmental needs of pigs (whether physical, social, or behavioral in nature).

#### Life Skills

Communication, decision making, empathy, keeping records, planning/organizing, teamwork, wise use of resources.

#### Subject Links

Science, Language Arts, Math

#### State Content Standards

##### Science

- Fourth Grade:
  - » Investigation and Experimentation – 6f

##### Language Arts

- Fourth Grade:
  - » Listening and Speaking Strategies – 1.1, 1.8
- Fifth Grade:
  - » Listening and Speaking Strategies – 1.3

##### Math

- Fourth Grade:
  - » Number Sense – 2.1
  - » Mathematical Reasoning – 3.3
- Fifth Grade:
  - » Number Sense – 2.1
  - » Mathematical Reasoning – 3.3
- Sixth Grade:
  - » Mathematical Reasoning – 3.3

#### Suggested Grouping

Groups of 2 to 3.

#### Materials Needed

(\* = Materials provided in curriculum)

- \* *Pig Housing Item Price Lists*
- \* *Shopping List*
- Flip chart or other large paper
- Notebook paper
- Pencils
- Paper
- Crayons/markers
- Scissors
- Calculators (optional)
- Stapler (optional)

#### Getting Ready

- Set up a “store” where the youth are to go shopping. To do so, start out by making twice as many *Swine Housing Item Price Lists* as you have groups. Cut out each item from the lists, gather multiples of each item into stacks, and staple each stack together. Arrange the stacks of items from each category (fencing, housing, feeders and waterers, toys, flooring and bedding) on different tables so the youth can visit each “store” separately.
- Make enough *Shopping Lists* for each group to have one.
- Divide the youths into groups.



## OPENING QUESTIONS:

1. **What do you know about what a swine needs in its home in order to live comfortably? Please explain.** Ask the youth to record their ideas on the flip chart paper provided or to share their thoughts verbally.
2. Types of responses to expect include appropriate food, shelter from heat or cold, comfortable bedding, water, safety (no dangerous materials, protection from predators), enough space to move around, appropriate lighting, clean floors with a non-slippery surface, fresh air, a stable social group (including at least one social companion).
3. **What do you think are some extra things that might make the quality of a swine's life better? Please explain.** Ask the youth to record their ideas on the flip chart paper provided or to share their thoughts verbally.
4. Types of responses to expect include toys, multiple social companions, and variety of feed types.
  - » **Volunteer Tip:** If the youth are having trouble coming up with ideas for responses to these questions, ask them to refer for inspiration to the lists they made of their own needs. For example, if they mentioned toys as one of their needs,

ask them what purpose the toys serve (e.g., fun, exercise, challenge, keeping away boredom). Explore with the youth how these same needs may also be important for pigs, and consider how we can address those needs. Are toys appropriate for pigs, or are there other means for allowing them to get exercise and avoid boredom? As another example, if the youth mentioned family or friends among their own needs, ask what purpose the family or friends serve (e.g., comfort, fun, companionship, love, safety). Explore with the youth how these same needs may also be important to pigs. Why might having the company of other pigs be important for a pig? What might be some problems that would be associated with housing pigs alone (e.g., stress, fear, loneliness)?

## PROCEDURE (EXPERIENCING) – BUDGETING AND SHOPPING

1. At this point, the youth are going to go shopping for the items they believe their pig will need for its home. Inform the youth that they will be shopping for supplies to appropriately house two pigs.
2. Each group of youth will be assigned a different budget. For five groups, set budgets of \$500, \$600, \$700, \$800, and \$900.

3. The groups will then visit the “store” and select the items they feel will best meet the needs of their pigs and at the same time fit within their budget. For each item they choose, the youth should record on their shopping list the item, the type of need (physical, social, behavioral, etc.), the cost, and the reason they chose that particular item. Remind the youth that they are shopping for the supplies they will need to appropriately house two pigs.
4. Finally, ask each group to create a drawing of the home they would create for their pigs using the materials they have purchased. (**Note:** The drawing should be large. Ask the youth to use a piece of flip chart paper.)

## SHARING, PROCESSING, AND GENERALIZING

Once they have completed their shopping and their drawings, engage the youth in a discussion about the items they have chosen. Have each group share their drawing and describe the items they chose to buy for their pigs. They should tell why they chose those items and tell how they made choices that would fit within their budget. Compare the lists. How did the amount of money in each budget affect the groups' choices?

## CLOSING QUESTIONS

1. **What are some things you learned about the environmental needs of pigs and how you can help provide for them? Please explain.**
2. **How might cost affect the decisions a person makes when trying to provide appropriate housing for pigs? Please explain.**

## CONCEPTS AND TERMS

At this point, volunteers need to ensure that the concept that pigs have important environmental needs (e.g., physical, social, and behavioral needs) has been introduced to or discovered by the youth. (**Note:** The goal is to get the youth to develop concepts such as this through their own exploration and to define terms using their own words.)

### CONCEPT APPLICATION 1

The things you need to have in your home or an animal needs to have in its home may change. The situations in the following scenarios would require that modifications be made to your pig's environment. What would you need to do to address these changing needs?

1. Suppose your family had to move from a warm area to a colder climate where it snows several months of the year. How would you design an environment to keep your pigs comfortable and healthy in the cold weather?
2. Suppose that your family had to move from a cooler area to a very warm climate where it is hot and dry several months each year. How would you design an environment to keep your pigs comfortable and healthy in the heat?

3. Imagine that your pigs are not getting enough exercise. How can you address this problem by changing the pigs' environment?
4. Imagine that one of your pigs has been nosing at the fence and repeating this behavior over and over, which may indicate that the pig is bored. How can you change the pig's environment to be more interesting and give the pig more to do?
5. Suppose that you want to improve the quality of your pig's environment but you have no more money to spend. What changes can you make that cost no money?

### CONCEPT APPLICATION 2: FOR YOUTH WHO HAVE PIGS

Have the youth take home a copy of their completed shopping list. Ask youth to talk with their family about the costs of creating and maintaining an appropriate environment for pigs. Youth who already have pigs at home should evaluate the animals' current environment and decide whether there are ways to improve their environment. The youth should talk about these improvements and their costs with their family members.

### CONCEPT APPLICATION 3: FOR YOUTH WHO ARE PLANNING TO OBTAIN PIGS

Have the youth take home a copy of their completed shopping list. Ask youth to talk with their family about the costs of creating and maintaining an appropriate environment for pigs. If the youth are planning to obtain pigs, they should work with their family to create a budget and plan a shopping list for the items they will need to properly house their pigs.

### CONCEPT APPLICATION 4: FOR YOUTH WHO DO NOT HAVE PIGS AND DO NOT PLAN TO GET THEM

Ask youth in this category to think about any animal that they own or that someone they know owns. Then they can create a list of that animal's environmental needs based on what they have learned about pigs' environmental needs. Remind the youth that some of the needs will be similar to those of pigs and some will be different. If the youth have pets at home, they can evaluate their pets' current environment and decide whether there are ways they could improve that environment. The youth should talk with their family members about these improvements and their costs.

### 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](http://www.vetmed.ucdavis.edu/vetext/local-assets/pdfs/pdfs_animal_welfare/swinecareprax.pdf).
- McGlone, J. et al. 2010. Guide for the care and use of agricultural animals in research and teaching, 3rd. ed. Federation of Animal Science Societies. [www.fass.org](http://www.fass.org).
- Schafer, S. R. 2002. The 4-H swine project: An introduction. University of Wyoming Cooperative Extension Service. [www.unce.unr.edu/4H/programs/stem/files/pdf/4-HManualIntroSwine.pdf](http://www.unce.unr.edu/4H/programs/stem/files/pdf/4-HManualIntroSwine.pdf).
- University of Florida Cooperative Extension Service. n.d. Essential housing for beginning swine projects. 4-H project guide. [www.volusia.org/core/fileparse.php/4701/urlt/HousingSwineProjectsGuide.pdf](http://www.volusia.org/core/fileparse.php/4701/urlt/HousingSwineProjectsGuide.pdf).



## PIG HOUSING ITEM PRICE LISTS

(Note: The price for each item is an estimate of the real cost.) For adult pigs in groups, each pig requires a minimum area of about 1.4 m<sup>2</sup>.

### FENCING

#### Wood fence with wood panels

- Wood fence with wood panels and gate: 8' x 8' = \$157.00
- Wood fence with wood panels and gate: 12' x 12' = \$241.00
- Wood fence with wood panels and gate: 18' x 18' = \$ 276.00
- Wood fence with wood panels and gate: 40' x 40' = \$490.00
- Wood fence with wood panels and gate: 80' x 80' = \$912.00



#### Wood posts with wire

- Wood posts with wire and gate: 8' x 8' = \$117.00
- Wood fence with wire and gate 12' x 12' = \$129.00
- Wood fence with wire and gate: 18' x 18' = \$141.00
- Wood fence with wire and gate: 40' x 40' = \$164.00
- Wood fence with wire and gate: 80' x 80' = \$224.00

#### Metal posts with wire

- Metal posts with wire and gate: 8' x 8' = \$115.00
- Metal posts with wire and gate: 12' x 12' = \$124.00
- Metal posts with wire and gate: 18' x 18' = \$133.00
- Metal posts with wire and gate: 40' x 40' = \$142.00
- Metal posts with wire and gate: 80' x 80' = \$177.00



### HOUSING

#### Pig Shelter: \$450

- Timber frame and roof that is treated with weatherproofing material.
- Triangle-shaped roof.
- Strong and sturdy.
- Enough to fit about 4 pigs.



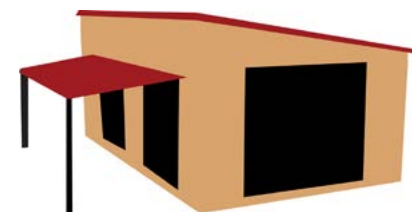
#### Pig Ark

- Easily movable.
- Made from high-grade steel.
- Very durable.
- Doesn't have a floor.
  - » 6' x 4': \$361.80
  - » 8' x 6': \$400.66
  - » 8' x 8': \$489.10
  - » 8' x 10': \$596.30
  - » 8' x 12': \$643.20



### Permanent Pig Shelter

- Body made of wood. Roof made of tin.
- Three openings for easy access into and out of the shelter.
- Mini-roof attached to the side.
- Structure cemented into the ground to prevent from being uprooted.
- 5' tall x 8' wide.
  - » Estimated material cost: \$500



### WATER AND FEED CONTAINERS

#### Rubber Bucket

- Crack- and crush-resistant.
- Flexible.
- Long-lasting and durable.
  - » 26 quart: \$9.95
  - » 42 quart: \$19.95



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

### Plastic Utility Pan

- Can be used as a feed or water dish on the ground.
- Tested to be stable and durable.
  - » 5 quart: \$3.13
  - » 3 gallon: \$7.50



### Hook-Over Portable Feed Pail: \$7.50

- For goats, sheep, horses, and llamas.
- Hooks over 2" x 4" or 2" x 6" board.
- Can be permanently mounted with screws.
- 8 quart.



### Hook-Over Corner Feeder: \$18.95

- Used in corners.
- Attach to fence with screws.
- 26 quart.



### Plastic Feeder Pan

- Can be used as a feed or water dish on the ground.
- Impact resistant.
- Tested to be stable and tough.
  - » 10 quart: \$10.50



### Hook-Over Portable Feeder

- For sheep, goats, dogs, and horses.
- Can be used for field, pasture, trailer, or stall.
- Rounded corners for easy access.
- Can hook over "2-by" boards (1¾" wide).
- Can be permanently screwed onto boards.
  - » 12 quart: \$19.50
  - » 15 quart: \$23.50



### Bucket

- Multi-purpose use.
- Made of plastic.
- Metal handle.
  - » 8 quart: \$5.95
  - » 10 quart: \$7.95
  - » 12 quart: \$9.95
  - » 32 quart: \$19.95



### Plastic Flat Back Bucket

- Can be used as a feed or water dish placed against a wall or fence.
- Handle makes it easier to carry and hang.
- Impact resistant.
- Tested to be stable and durable.
  - » 8 quart: \$6.95
  - » 12 quart: \$7.95
  - » 18 quart: \$9.95
  - » 20 quart: \$10.95



### Mini Hook-Over Portable Feeder: \$10.95

- Good for smaller breeds.
- Easy to transport.
- Hooks over fence.
- 6 quarts.



### Portable Feeder with Divider: \$23.95

- Hooks to a variety of fences (wire, pipe, and board fences).
- Has adjustable steel brackets that fit most fence types.
- Can hook onto wire fences with spring clips (not included).





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

### Multi-Purpose Buckets

- Used for multiple purposes (e.g., feed storage, waterer, feeder).
- Made of durable, sturdy plastic.
- Short rope handles.
  - » 8 quart: \$4.50
  - » 70 quart: \$20.50



### Automatic Waterer: \$32.95

- Install on a fence, wall, or corral.
- Adjustable float maintenance for constant water.
- Connects with ordinary ¾" garden hose.
- Durable polyethylene and nylon construction.
- 16 quart



### Steel Automatic Waterer: \$33.95

- Ideal for horses, cattle, hogs, and dogs.
- Constant float-controlled water level.
- Easy to use and clean.
- Made of high quality steel.
- 8" across x 4¾" deep.



### Rubber Ground Feeders

- Placed on the ground.
- Made of durable rubber.
  - » 2 quart: \$3.95
  - » 4 quart: \$4.50
  - » 8 quart: \$6.50
  - » 3 gallon: \$9.50
  - » 6½ gallon with small handles: \$13.50
  - » 6½ gallon with metal hooks: \$17.50
  - » 15 gallon: \$26.50



### Flat-Back Rubber Feeder: \$17.95

- Made of durable rubber.
- Metal handle that can easily hook onto nails.
- 20 quart



### Over-the-Fence Feed Trough

- Hooks onto fence.
- Durable and sturdy.
- Hangs on any wire or wooden fence.
- Easy to clean.
- 12" L x 9" W x 6" H: \$22.95
- 36" L x 9" W x 6" H: \$47.50



### Water Basin with Hose: \$92.50

- Able to refill automatically to a desired level.
- Contains non-siphon valve to adjust the water level.
- Includes 6' hose.
- 26" top x 31" bottom x 14" height



### Over-the-Fence Feeder

- Heavy-duty construction.
- Able to hook onto sturdy fences and corrals.
- Resists cracking and weather damage.
- Vented closure.
  - » 20 gallon: \$47.95
  - » 50 gallon: \$52.00



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

## Hog Feeder

- Made of heavy-duty steel.
- Top door flips open from the back for easy loading.
  - » 1 panel: \$79.95
  - » 2 panel: \$133.50



## Calf Bottle and Nipple: \$5.99

- 2 quart sturdy plastic nursing bottles with snap-on rubber nipple.
- Easy to clean and sterilize.



## Toys

### Bowling Ball: \$1.50



### Beach Ball: \$1.00



## Old Tire: Free



## Rubber Ball: \$7.00

- Provides exercise, alleviates boredom, and keeps the pig curious.
- Can be drilled with a hole to dispense food as the pig pushes it around.



## Football: \$22.00

- Provides exercise, alleviates boredom, and keeps the pig active.



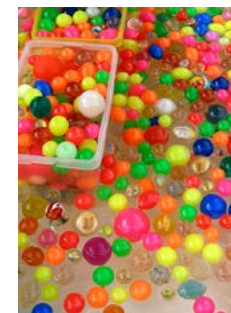
## Rooting Box: \$30.00

- Specially designed for the safety and comfort of pigs.
- Can be filled with mud or dirt.
- Can also be filled with plastic balls or smooth river rocks for an alternate rooting activity.
- 2' x 2', 4" deep



## Plastic Balls: \$21.50

- Colorful plastic balls.
- Balls are in various sizes.
- Balls are made of soft plastic so they will indent if squeezed or sat upon.
- Can be put in a rooting box to promote rooting behavior.



## Hard Plastic Pool: \$10.00

- 16" deep x 66" diameter.
- Holds up to 50 gallons at 80% of the wall height (recommended fill level).
- Fill with water and mud for wallowing.
- Fill with dirt and food items for rooting.



## Large Plastic Pool: \$24.00

- 21" H x 71" W x 73" L
- Includes inflatable floor with drain plug and repair patch kit.
- Holds up to 100 gallons at 80% of the wall height (recommended fill level).
- Fill with water and mud for wallowing.
- Fill with dirt and food items for rooting.





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### Hose: \$15.00

- 5/8" x 50'
- Can be used to fill the inflatable pool.
- Can also be hung from a fence or ceiling as a toy to stimulate the animal.



### Wood Shavings

- Small to medium flakes, not dusty.
- Can be stored outside under a tarp.
  - » 50 lb bag: \$8.00



### MISCELLANEOUS SUPPLIES

#### Feed Scoop: \$4.50

- Used for feed and supplements.
- Made of durable plastic.
- Enclosed for easy scooping.
- Handle attached.
- Measurements located inside for easy measuring.
- Holds up to 3 quarts.



### Scraps of Cloth: Free

- Hang on the fence or ceiling to stimulate the animal.
- Can use old clothing, sheets, or ask your local fabric store for scraps.



### Mixed Shavings

- Screened, leaving only uniform shavings.
- 100% natural.
- Virtually dust-free.
- Soft and comfortable.
- Made of fir and pine shavings.
  - » 50 lb bag: \$5.85



#### Small Feed Scoop

- Used to pick up feed.
- Made of plastic.
  - » 2 pints: \$2.50
  - » 5 pints: \$4.50



### FLOORING AND BEDDING

#### Rubber Mats: \$39.99

- Great anti-fatigue mats.
- Used in stalls and trailers.
- Non-absorbing and easy to clean.
- 1/2" x 4' x 6'



#### Oat Straw

- In conventional (small) bales.
  - » \$3.35 per bale for up to 5 bales
  - » \$3.00 per bale for 6 to 49 bales
  - » \$2.68 per bale for over 50 bales



#### Steel Feed Scoop

- Used to pick up feed.
- Made of galvanized steel.
- Great for scooping grain.
  - » 3 quart: \$8.95
  - » 4 quart: \$11.00
  - » 6 quart: \$13.50



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### Angled Stall Fork

- Made of 100% polycarbonate, which provides strength and flexibility.
- Weather resistant.
- Lightweight.
- Angled fork designed to easily pick up manure and prevent spillage.
  - » Without side panels:  
(fork: 13½" long x 15½" wide): \$23.95
  - » With side panels:  
Small (fork: 12½" long x 11½" wide): \$21.95  
Large (fork: 13" long x 16" wide): \$29.95



### Professional Heavy-Duty Broom: \$34.50

- For contractors, landscape work, and agriculture.
- Durable and long lasting.



### Janitor Broom: \$11.50

- Handmade.
- Bristles made of corn fibers.
- Hardwood handle.
- 5 rows of stitching.



### Scoop Shovel

- Plastic shovel:  
Large scoop/plastic handle: \$32.50
- Aluminum shovel:  
Small scoop/short handle: \$31.95  
Large/long handle: \$34.95



### Hay Fork

- Used to pick up hay and manure.
  - » 5 prongs (longer): \$58.50
  - » 6 prongs (shorter): \$62.00



### Dust Pan: \$12.50

- Handle attached for easy trash pickup.
- Opening closes when hung, to trap trash.



### Steel Trash Can: \$26.95

- Holds up to 30 gallons.
- Made of galvanized steel with a zinc coating.
- Can be used to storage or trash.



## REFERENCES

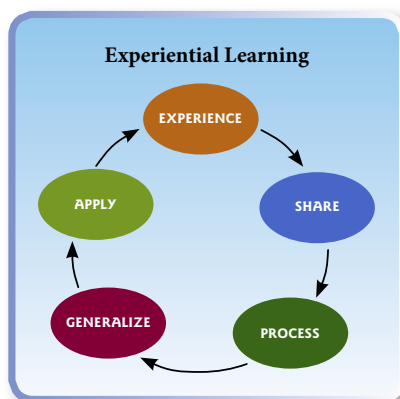
Photographs courtesy of Higby's Country Feed Store, Dixon, California.

## 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.
- **Germs:** 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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