

<b>Course</b>	Agricultural Science I
<b>Unit</b>	Introduction to Swine Production
<b>Lesson</b>	Introduction to the Swine Industry
<b>Estimated Time</b>	50 minutes

### Student Outcome

Describe the importance of the swine industry in Missouri and the United States.


### Learning Objectives

1. Describe the economic implications of the swine industry.
2. Define commonly used swine terms.
3. Explain how the swine industry evolved in the United States.
4. Explain how production systems differ.
5. Identify the business structures in the swine industry.
6. Identify career opportunities in the swine industry.

### Grade Level Expectations

### Resources, Supplies & Equipment, and Supplemental Information

#### Resources

1. Activity Sheets
  -  AS 1 – A Career in the Swine Industry
2. *Introduction to Swine Production (Student Reference)*. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.
3. *Introduction to Swine Production Curriculum Enhancement*. University of Missouri-Columbia: Instructional Materials Laboratory, 2003.

#### Supplies & Equipment

- ☐ Map of the United States

#### Supplemental Information

1. Internet Sites
  - ☐ Pig.com. Accessed July 3, 2007, from [http://www.pig.com/designs/pig\\_facts.htm](http://www.pig.com/designs/pig_facts.htm).
  - ☐ Swine Publications. MU Extension. University of Missouri-Columbia. Accessed July 3, 2007 from <http://extension.missouri.edu/explore/agguides/ansci/swine.htm>.
  - ☐ "Pigs, Pork, Swine." Accessed July 3, 2007, from <http://www.clover.okstate.edu/fourh/aic/lessons/extras/facts/swine.html>.
  - ☐ "Missouri Swine Resource Guide." MU Extension. University of Missouri-Columbia. Accessed July 3, 2007, from <http://agebb.missouri.edu/swine/>.
  - ☐ Missouri Farm Facts-Swine. Accessed July 3, 2007 from <http://agebb.missouri.edu/mass/indepth/hogs/hgfacts.htm>.
  - ☐ "Today's U.S. Pork Industry." National Pork Producers Council. Accessed July 3, 2007, from [http://www.nppc.org/about/pork\\_today.html](http://www.nppc.org/about/pork_today.html).

### Interest Approach


Place students in small groups. Provide a map of the United States to each group. Working as a group, have the students identify what they feel are the top five swine-producing states. Once all the groups are finished, have a representative from each group tell which states were chosen and why. List each state on the board and use this list to create a discussion as to why the states were chosen.


### Communicate the Learning Objectives

1. Describe the economic implications of the swine industry.
2. Define commonly used swine terms.
3. Explain how the swine industry evolved in the United States.
4. Explain how production systems differ.
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Instructor Directions	Content Outline
<b>Objective 1</b>  <i>Emphasize the size of the swine industry across the United States and in Missouri. Record statistics concerning the swine industry on the board.</i>	<b>Describe the economic implications of the swine industry.</b> <ol style="list-style-type: none"><li>1. In 2005, more than 105 million hogs were processed into over 21 billion pounds of pork.</li><li>2. Around 67,000 swine producers operate nationwide.</li><li>3. The swine industry generally ranks either fourth or fifth annually among all production agriculture industries in terms of farm cash receipts.</li><li>4. More than \$11 billion worth of hogs are sold each year with a retail value of \$30 billion.</li><li>5. In 2005, Missouri had approximately three percent of hog operations nationwide.</li><li>6. The state ranked seventh in the number of hogs and pigs produced.</li><li>7. Mercer, Sullivan, and Putnam counties, which have close to one million head of hogs, are the top three Missouri counties in swine production.</li></ol>
<b>Objective 2</b>  <i>Ask the class how many students have direct experience with swine. Discuss the terminology.</i>	<b>Define commonly used swine terms</b> <ol style="list-style-type: none"><li>1. Farrow — to give birth</li><li>2. Gilt — young female that has not yet farrowed</li><li>3. Barrow — castrated male pig</li><li>4. Boar — male pig used for breeding</li><li>5. Sow — mature female hog</li><li>6. Feeder pig — gilt or barrow between weaning and finishing</li></ol>

Instructor Directions	Content Outline
	<p>7. Market hog – gilt or barrow weighing from 240 to 270 pounds and ready for processing</p>
<p><b>Objective 3</b></p> <p><i>Ask the class if they think that more or fewer producers are involved in swine production today than 30 years ago. During the discussion, emphasize how the location of the industry and current focus of the swine industry are changing.</i></p>	<p><b>Explain how the swine industry evolved in the United States.</b></p> <ol style="list-style-type: none"> <li>1. Fewer producers – currently 67,000, compared to three million 40 years ago</li> <li>2. Larger farms – ranging in size from 1,000 to 80,000 sows</li> <li>3. Changing location – from the Corn Belt to North Carolina, Arkansas, Texas, Kansas, and Oklahoma</li> <li>4. Focus on expanding exports</li> </ol>
<p><b>Objective 4</b></p> <p><i>Divide the board into three categories. Label them “Farrow-to-Finish Production,” “Feeder Pig Production,” and “Feeder Pig Finishing.” Write the characteristics of each production system in the appropriate category.</i></p>	<p><b>Explain how production systems differ.</b></p> <p>Farrow-to-finish production</p> <ol style="list-style-type: none"> <li>1. Most common type of production system, involving the entire production process.</li> <li>2. Gilts and sows are mated to boars or artificially inseminated.</li> <li>3. Females farrow and are bred again when the piglets are weaned.</li> <li>4. Pigs are moved to a nursery until they weigh approximately 50 pounds.</li> <li>5. The pigs are then moved to finishing barns until they weigh 240 to 270 pounds. Upon reaching the weight goal, they are sold as market hogs.</li> </ol> <p>Feeder pig production</p> <ol style="list-style-type: none"> <li>1. Involves producing pigs to sell to other producers to be fed for market.</li> <li>2. Baby pigs are sold when they weigh approximately 50 pounds.</li> </ol> <p>Feeder pig finishing</p> <ol style="list-style-type: none"> <li>1. Finishers purchase or receive pigs at approximately 50 pounds.</li> <li>2. They feed the pigs until they reach a market weight of 240 to 270 pounds.</li> <li>3. The pigs are then sold for processing.</li> </ol>

<p><b>Objective 5</b></p> <p><i>Ask students what brand names or farm names they associate with the swine industry (e.g., Premium Standard Farms, Excel). Describe the influx of large corporations into the swine industry over the last several years. Focus on vertically integrated operations.</i></p>	<p><b>Identify the business structures in the swine industry.</b></p> <p>Privately owned family farms</p> <p>Network production</p> <ol style="list-style-type: none"> <li>1. A group of producers cooperate to decrease production costs and improve profits for each operation.</li> <li>2. Can involve collective marketing arrangements, purchasing supplies at a discount for member operations, or cooperative production of swine.</li> </ol> <p>Contract basis</p> <ol style="list-style-type: none"> <li>1. The individual producer signs a contract to produce pigs for a company.</li> <li>2. The company owns the pigs and finances the operation. The producer provides the facilities, equipment, and labor.</li> <li>3. The company makes many of the management decisions.</li> <li>4. The producer is paid a fixed amount per animal.</li> </ol> <p>Large-scale corporate farms</p> <ol style="list-style-type: none"> <li>1. Goal is efficient production of a uniform product.</li> <li>2. May be a vertically integrated operation, meaning the company owns and controls all phases of the production process.</li> </ol>
<p><b>Objective 6</b></p> <p><i>Describe the diversity of the swine industry. List some of the careers. Have students use AS 1 to research a career in the swine industry and report their findings to the class.</i></p> <p> AS 1 – A Career in the Swine Industry</p>	<p><b>Identify career opportunities in the swine industry.</b></p> <ol style="list-style-type: none"> <li>1. Producer</li> <li>2. Breeding manager</li> <li>3. Farrowing manager</li> <li>4. Nursery manager</li> <li>5. Feed mill technician</li> <li>6. Artificial insemination technician</li> <li>7. Animal geneticist</li> <li>8. Animal health product sales representative</li> <li>9. Veterinarian</li> <li>10. Hog buyer</li> <li>11. USDA inspector</li> <li>12. Quality control supervisor</li> </ol>

<p><b>Application:</b></p> <p> AS 1 – A Career in the Swine Industry</p>	<p>Answers to AS 1 Answers will vary.</p> <p>Other activities</p> <ol style="list-style-type: none"> <li>1. Have students research information about swine numbers in your community using <i>Missouri Farm Facts</i>.</li> <li>2. Have students compile a list of local businesses or careers directly related to swine production and the swine industry.</li> </ol>
<p><b>Closure/Summary</b></p>	<p>Receipts from swine production total more than \$11 billion each year. The swine industry is evolving, with fewer producers and larger farms, changes in the location of swine production, a focus on increasing exports, and a growing interest in corporate hog production. Many career opportunities are available in this diverse industry.</p>
<p><b>Evaluation: Quiz</b></p>	<p>Answers to Evaluation</p> <ol style="list-style-type: none"> <li>1. c</li> <li>2. d</li> <li>3. d</li> <li>4. a</li> <li>5. Answers may include any three of the following: producer, breeding manager, farrowing manager, nursery manager, feed mill technician, artificial insemination technician, animal geneticist, animal health product sales representative, veterinarian, hog buyer, USDA inspector, or quality control supervisor.</li> <li>6. A barrow is a castrated male, a boar is a male pig used for breeding, and a gilt is a young female who has not yet farrowed.</li> <li>7. The individual producer signs a contract to produce pigs for a company. The company owns the pigs and finances the operation, and the producer provides the facilities, equipment, and labor. The company makes many of the management decisions. The producer is paid a fixed amount per animal.</li> <li>8. Farrow-to-finish swine production is the most common type of production, covering the entire production process. Gilts and sows are mated to boars. Females farrow and are bred again when the piglets are weaned. The baby pigs are moved into a nursery until they weigh approximately 50 pounds.</li> </ol>

	They are then moved to finishing barns where they grow until they reach 240 to 270 pounds. Upon reaching the weight goal, they are sold as market hogs.
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