

The Life Cycle of a Pig:

A Companion Activity for the North Carolina Pork Ag Mag

4-8 Subject Area: Science, English Language Arts, Social Studies

Purpose:

Students will gain knowledge regarding the life cycle of a pig to create an ideal living environment during each stage of a pig's life while using a virtual tour of a pig farm, and the North Carolina Pork Ag Mag.

Essential Questions:

1. What is the life cycle of a pig?
2. What are a farrowing, a nursery, and finishing barns?
3. What technological inventions and accommodations have been made on pork farms to support pigs throughout their life cycle?
4. What would the ideal pig farm look like at each stage of a pig's life?

Materials:

- [North Carolina Pork Ag Mag](#) (1 per student)
- A digital copy of the Pork Ag Mag and video presentation ability (projector)
- One printed copy of directions for the farrowing, nursery, and finishing barns
- 3 large pieces of poster paper or butcher paper
- Scissors and glue
- Pens, pencils, markers, and crayons

Procedures:

1. Read through the North Carolina Pork Ag Mag with your class. After doing so, engage with them in a discussion surrounding the essential questions listed above.
2. Once you have discussed these questions with your class, use the QR code link found in the blue section of the Ag Mag labeled "The Life Cycle of a Pig".
 - Pig Farming VR Experience: See inside a real pig barn
<https://www.youtube.com/watch?v=cQ-5F-gT-6c>
3. Once the video has ended, divide students into three groups. Each group should receive a large piece of poster paper, arts and crafts supplies, and one set of instructions for either Group 1: Farrowing Barn, Group 2: Nursery Barn, or Group 3: Finishing Barn (see below).
4. Next, introduce the activity. Their job is to create an ideal farm based on the requirements and facts in their group instructions. Encourage students to think and reflect back to the video Ag Mag to support their work. Also emphasize this can be a creative endeavor; however, remind them to focus on creating the best possible outcome when drawing their barns.
 - Note, it might be helpful to print out each group's instructions for the students to use when creating their ideal pig barns.

5. Once each group has finished drawing their barns, have them present their ideas to the rest of the class. Encourage students to elaborate on their choices and thought processes when creating their ideal pork farms.
6. Engage conversations during their presentations that highlight technological innovations and changes made to accommodate a developing pig. Questions regarding nutrition and best animal care practices could also be included for investigating scientific practices and reasoning.

Group 1: Farrowing Barn

Vocabulary:

Gestation: the name for pregnancy in livestock animals; a sow's pregnancy lasts 3 months, 3 weeks, and 3 days.

Gilt: a female pig that has never given birth.

Sow: an adult, female pig that has given birth to at least one piglet.

Piglet: a baby pig.

Farrowing: the birthing of pigs.

Wean: time which a piglet is big enough to eat on its own and doesn't nurse from the sow.

Farrowing Barn: a space designed for sows and piglets during farrowing that allows piglets to be alongside their mother and room for the sow to move around without harming the piglets.

Biosecurity: the process of washing items in and around the farrowing barn and wearing clean clothing and boots to keep livestock healthy.

Farrowing Barn Requirements:

Your drawing of a **farrowing barn** must include:

- Farrowing stalls, or a place for the **sow** to rest, away from the **piglets**.
- Heating lamps for piglets
- Food and water stations for the sow
- Showers for farmers and visitors to maintain high **biosecurity**, as well as, an area to store clean clothes and boots to wear around the farm.

Directions:

Using the facts and vocabulary we learned from the Ag Mag and video; draw an ideal version of a **Farrowing Barn** with your group. Use the requirements listed above to construct your barn. When you're done, cut out each label and glue it to the corresponding part of your finished drawing. Be sure to write the name of your group as well as what barn you are drawing in **big letters** at the top of your poster paper. Don't forget to write your names as well!

Farrowing Stalls	Heat Lamps
Showers for Farmers	Clean Clothes Storage
Feeder Station for Sow	Water Station for Sow

Group 2: Nursery

Vocabulary:

Nursery: the second stage in the pork life cycle where the piglets are sent to grow and mature.

Gilt: a female pig that has never given birth.

Starter diet: food for nursery pigs made of corn, soybeans, and supplements of vitamins and/or minerals. This mixture is designed to help them grow quickly while staying healthy.

Biosecurity: the process of washing items in and around the nursery barn and wearing clean clothing and boots to keep livestock healthy.

Nursery Requirements:

Your drawing of a **nursery** must include:

- Stalls for nursery pigs to live in
- Food and water stations
- Computer system station that controls food and water, temperature controls, and farm security

Directions:

Using the facts and vocabulary we learned from the Ag Mag and video; draw an ideal version of a **Nursery Barn** with your group. Use the requirements listed above to construct your barn. When you're done, cut out each label and glue it to the corresponding part of your finished drawing. Be sure to write your name of your group as well as what barn you are drawing in **big letters** at the top of your poster paper. Don't forget to write your names as well!

Stalls for Pigs	Feeder Station
Water Station	Computer Systems Station

Group 3: Finishing Barn

Vocabulary:

Finishing Barn: the third stage in the pork life cycle where matured pigs are given additional space to grow until they are ready for the market.

Biosecurity: the process of washing items in and around the nursery barn and wearing clean clothing and boots to keep livestock healthy.

Finishing Barn Requirements:

Your drawing of a **finishing barn** must include:

- Stalls for the matured pigs to live and grow in
- Food and water stations
- Misters to keep pigs cool in the hotter parts of the year
- Heaters to keep pigs warm in the winter

Directions:

Using the facts and vocabulary we learned from the Ag Mag and video; draw an ideal version of a **Finishing Barn** with your group. Use the requirements listed above to construct your barn. When you're done, cut out each label and glue it to the corresponding part of your finished drawing. Be sure to write the name of your group, as well as what barn you are drawing, in **big letters** at the top of your poster paper. Don't forget to write your names as well!

Feeder Station	Water Station
Misters	Heaters
Stalls for Matured Pigs	

Content Standards:

4th Grade:

Science:

- 4.L.1 Understand the effects of environmental changes, adaptation and behaviors that enable animals (including humans) to survive in changing habitats.
- 4.L.1.1 Give examples of changes in an organism's environment that are beneficial to it and some that are harmful.

Language Arts:

- RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
- RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI.4.5 Describe the overall structure of events, ideas, concepts, or information in a text or part of a text.
- RI.4.7 Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears.
- W.4.5 Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W.4.6 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- L.4.4 Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.
- L.4.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being and that are basic to a particular topic.

Social Studies:

- 4.E.1 Understand how a market economy impacts life in North Carolina.
- 4.E.1.3 Analyze the historical and contemporary role that major North Carolina industries have played in the state, nation and world.
- 4.E.1.4 Explain the impact of entrepreneurship on the economy of North Carolina.

5th Grade:

Science:

- 5.L.2 Understand the interdependence of plants and animals with their ecosystem.
- 5.L.2.3 Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.

Language Arts:

- RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.5.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question or to solve a problem efficiently.

RI.5.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).

W.5.5 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

W.5.6 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work and provide a list of sources.

L.5.4 Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.

Social Studies:

5.E.1 Understand how a market economy impacts life in the United States.

5.E.1.2 Explain the impact of production, specialization, technology and division of labor on the economic growth of the United States.

6th Grade:

Science:

6.L.2 Understand the flow of energy through ecosystems and the responses of populations to the biotic and abiotic factors in their environment.

6.L.2.1 Summarize how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within food chains and food webs (terrestrial and aquatic) from producers to consumers to decomposers.

Language Arts:

RI.6.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.6.2 Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

RI.6.3 Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text.

RI.6.4 Determine the meaning of words and phrases as they are used in a text; analyze the impact of a specific word choice on meaning.

RI.6.7 Integrate information presented in different media or formats, including visually and quantitatively, as well as in words to develop a coherent understanding of a topic or issue.

W.6.5 Conduct short research projects to answer a question, drawing on several sources and refocusing the investigation when appropriate.

SL.6.2 Interpret information presented in diverse media and formats and explain how it contributes to a topic, text, or issue under study.

SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; adapt speech to a variety of contexts and tasks.

L.6.4 Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.

L.6.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; develop vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Social Studies:

6.G.1 Understand geographic factors that influenced the emergence, expansion and decline of civilizations, societies and regions (i.e. Africa, Asia, Europe, and the Americas) over time.

6.G.1.4 Explain how and why civilizations, societies and regions have used, modified and adapted to their environments (e.g., invention of tools, domestication of plants and animals, farming techniques and creation of dwellings).

7th Grade:

Science:

7.L.2 Understand the relationship of the mechanisms of cellular reproduction, patterns of inheritance, and external factors to potential variation among offspring.

7.L.2.3 Explain the impact of the environment and lifestyle choices on biological inheritance (to include common genetic diseases) and survival.

Language Arts:

RI.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.7.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.

RI.7.4 Determine the meaning of words and phrases as they are used in a text; analyze the impact of a specific word choice on meaning and tone.

RI.7.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.

RI.7.6 Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.

W.7.5 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.

W.7.6 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

SL.7.2 Analyze the main ideas and supporting details presented in diverse media and formats and explain how the ideas clarify a topic, text, or issue under study.

SL.7.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; adapt speech to a variety of contexts and tasks.

L.7.4 Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.

L.7.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; develop vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Social Studies:

7.G.1 Understand how geography, demographic trends, and environmental conditions shape modern societies and regions.

7.G.1.3 Explain how natural disasters (e.g. flooding, earthquakes, monsoons and tsunamis), preservation efforts and human modification of the environment (e.g. recycling, planting trees, deforestation, pollution, irrigation systems and climate change) affect modern societies and regions.

8th Grade:

Science:

8.L.3 Understand how organisms interact with and respond to the biotic and abiotic components of their environment.

8.L.3.1 Explain how factors such as food, water, shelter and space affect populations in an ecosystem.

8.L.5 Understand the composition of various substances as it relates to their ability to serve as a source of energy and building materials for growth and repair of organisms.

8.L.5.1 Summarize how food provides the energy and the molecules required for building materials, growth and survival of all organisms (to include plants).

Language Arts:

RI.8.1 Cite textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

RI.8.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

RI.8.3 Analyze how a text makes connections among and distinctions between individuals, ideas, or events.

RI.8.4 Determine the meaning of words and phrases as they are used in a text; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

W.8.6 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; adapt speech to a variety of contexts and tasks.

L.8.4 Determine and/or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.

L.8.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; develop vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Social Studies:

8.H.3 Understand the factors that contribute to change and continuity in North Carolina and the United States.

8.H.3.2 Explain how changes brought about by technology and other innovations affected individuals and groups in North Carolina and the United States (e.g. advancements in transportation, communication networks and business practices).

National Agricultural Literacy Outcomes Grades 3-5:

Agriculture and the Environment

T1.3-5

(e) Recognize the natural resources used in agricultural practices to produce food, feed, clothing, landscaping plants, and fuel (e.g., soil, water, air, plants, animals, and minerals)

Plants and Animals for Food, Fiber & Energy

T2.3-5

(d) Provide examples of specific ways farmers/ranchers meet the needs of animals

(e) Understand the concept of stewardship and identify ways farmers/ranchers care for soil, water, plants, and animals

Science, Technology, Engineering & Mathematics

T4.3-5

(b) Describe how technology helps farmers/ranchers increase their outputs (crops and livestock yields) with fewer inputs (less water, fertilizer, and land) while using the same amount of space

(d) Provide examples of science being applied in farming for food, clothing, and shelter products

National Agricultural Literacy Outcomes Grades 6-8:

Agriculture and the Environment Outcomes

T1.6-8

(h) Recognize the factors of an agricultural system which determine its sustainability

Plants and Animals for Food, Fiber & Energy

T2.6-8

(e) Identify strategies for housing for animal welfare and the safety of animal products (e.g., meat, milk, eggs)

Food, Health, and Lifestyle

T3.6-8

(i) Identify sources of agricultural products that provide food, fuel, clothing, shelter, medical, and other non-food products for their community, state, and/or nation

Science, Technology, Engineering & Mathematics Outcomes

T4.6-8

(d) Discuss how technology has changed over time to help farmers/ranchers provide more food to more people

- (f) Explain the harmful and beneficial impacts of various organisms related to agricultural production and processing (e.g., harmful bacteria/beneficial bacteria, harmful/beneficial insects) and the technology developed to influence these organisms
- (h) Identify specific technologies that have reduced labor in agriculture
- (i) Provide examples of science and technology used in agricultural systems (e.g., GPS, artificial insemination, biotechnology, soil testing, ethanol production, etc.); explain how they meet our basic needs; and detail their social, economic, and environmental impacts

Sources:

1. Pigs of the Farm Lesson
https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=714&author_state=0&grade=3&search_term_lp=pig