



## Lesson Two: Pig Escape

*Level: High School*

### **PURPOSE**

Students will participate in an Escape Box scenario to learn how grouping piglets and raising them in farrowing barns enhances their chance to survive and reproduce.

### **NEBRASKA STATE EDUCATION CONTENT STANDARDS CONNECTION**

SC.HS.7.2.d Evaluate the evidence for the role of group behavior in individual and species' chances to survive and reproduce.

AFNR.HS.2.2.a Demonstrate management techniques that ensure animal welfare.

AFNR.HS.2.8.b Evaluate the effects of environmental conditions on animals and create plans to ensure favorable environments for animals.

### **ESTIMATED TIME**

50 minutes

### **MATERIALS NEEDED**

- » Working Journal Worksheet – 1 per student
- » Escape Room Clue and Prop Set – 1 set per group of 4 students
  - Farrowing Barn Introduction Reading
  - Clues One – Seven, cut apart, sealed in individual envelopes
  - Clue # 1 De-Coder
  - Clue #4 Maze
  - Clue #6 Morse Code De-Coder
  - Clue #7 Plot Diagram cut apart, and mixed in a random order
  - Laptop and YouTube Access
  - Scratch Paper – 1 piece
  - Teacher Key
- » Classroom Countdown Timer
- » Optional, Creative Ideas to Enhance Escape Room:
  - Drape a bike chain around a door handle. Final clue leads to code that opens bike lock.
  - Create or purchase various types of paper to print on, such as distressed parchment, vintage newsprint, graph paper, etc.



- For the clues involving numbers, utilize locking file cabinets, lock boxes, or briefcases with corresponding codes or locks.
- Lock the classroom door and have the final clue lead to a key to open the door. Place the key in a hard to reach place and give the students a magnet to retrieve it.

### VOCABULARY

**Boar:** A full grown, uncastrated male pig.

**Farrow:** The act of giving birth to baby pigs.

**Farrowing Barn:** A climate-controlled barn where piglets are born.

**Gestation:** The pregnancy period of a sow which lasts 114 days or 3 months, 3 weeks and 3 days.

**Gilt:** A young female pig that has not yet given birth to a litter of piglets.

**Litter:** A group of piglets that a sow gives birth to at one time.

**Piglet:** A newborn or young pig.

**Sow:** A full grown female pig that has given birth to piglets.

### BACKGROUND INFORMATION

Read or summarize the following information for students prior to the lesson:

As in any species, the first step in a pig's lifestyle is birth. The process of a female pig giving birth to piglets or baby pigs is called farrowing. Young female pigs that have not yet given birth to a litter of piglets are called gilts; once they have given birth they transition to being called a sow. The gestation length of sows is approximately 114 days (about 3 weeks, 3 months, 3 days). Gilts and sows are bred using one of two methods: "natural mating" or "artificial insemination." In natural mating, a full-grown male pig, or boar, is introduced to a female in a penned area. In artificial insemination, semen is collected from boars and used to breed female pigs. This method of breeding, which is being utilized by most breeders in the pork industry allows producers to take advantage of genetic choices.

There are eight major breeds of pigs: Berkshire, Chester White, Duroc, Hampshire, Landrace, Poland China, Spotted Swine, Yorkshire. Each of these breeds have unique markings and characteristics, such as whether their ears droop or stand naturally upright.

From the time piglets are born, pork producers ensure that they are well cared for. They are housed in special barns, known as farrowing barns, with their mothers. Here, they remain in farrowing stalls, which are specially-designed pens that allow them to safely rest next to their mothers and drink milk. Heat lamps in the farrowing barn and specialized flooring keeps the piglets warm. Immediately after birth, it is essential that piglets drink colostrum, which is the sow's first milk from their mothers or are supplemented with colostrum; this is high in immunological value. Additionally, while in the farrowing barn, producers care for the piglets' health by administering iron shots. An average sow will give birth to a litter containing 8 to 12 piglets, about twice a year. Sometimes, producers may give an injection to induce farrowing, but often, the sow will go into labor on her own. Sows typically remain in the herd to give birth to 7 litters.



## Part One: Learning Activity

### INTEREST APPROACH

1. Set context for today's lesson and activities: Explain to students that by entering the classroom today, they have entered the pork chain of production as a pig farmer and are now responsible for farrowing sows multiple times each year and seeing that their piglets are raised properly and can move on to the next phase of production, the nursery.
2. After birth (farrowing), the pigs have become "trapped" in the farrowing barn and are unable to leave and move onto the next barn and phase of production, nursery and weaning - unless students can help them escape. *[If available, place actual lock on classroom door to generate enthusiasm.]* To help your pigs escape, there are a series of challenges you must complete and codes you must crack. Your goal is to get your pigs to escape the farrowing barn as fast as possible.
3. Discuss scenario: Why is it essential pigs are allowed to move beyond the farrowing barn stage of production?
  - *They will eventually need food beyond milk. Additionally, they could outgrow their facilities and begin to fight with one another or place burden on the facilities.*

### CONDUCT ACTIVITY

1. Depending on the size of the class, you may allow the students to complete the activity as an entire class or divide students into groups of 4.
2. Pass out the *Working Journals* and *Farrowing Barn Introduction Reading*, one per student.
3. Set expectations for escape room:
  - The overarching question students are seeking to answer is: How does grouping piglets and raising them in farrowing barns enhance their chance to survive and reproduce?
  - At each clue, students will take out their *Working Journal* to record the new evidence gained. The *Working Journal* must be complete to have escaped.
  - Students have 30 minutes to escape from the room. They may or may not escape but will not be given extra time.
  - There are 7 clues. The clues are numbered and must be solved in order. After solving each clue, write down your "move on code" in your working journal.
  - You may not open the next clue envelope until you have received the "ok" from your instructor. There are two options for requiring students to complete each clue correctly before moving onto the next.
    - The first is to have students write down their move on codes in their journals and then walk around the room and sign-off on their papers giving them the "ok" to move forward and open the next clue envelope.



- The second is to provide students access to the Google Form entitled, *Pig Escape Room Lock*. This form requires students to type in their move on codes correctly before it will let them move on to the next section. Google forms self-checks that their move on codes are correct. Capitalization of move on codes does matter in the Google form.
  - No cheating. Remain focused on individual group efforts.
  - Everyone must participate. In fact, it will be a benefit for everyone to look at the clue at the same time!
  - Instructor may offer additional hints as necessary.
4. Start visible countdown timer, displaying 30 minutes.
  5. Students work on completing clues until they complete all. Provide additional help as needed.
  6. Collect student working journals at the completion of the activity.

### **FOLLOW UP QUESTIONS**

Discuss the experience. Provide solutions to the entire class if groups did not finish. Feed availability, religious and cultural preferences, income.

1. What was challenging about the escape room?
  - Answers will vary.
2. How confident are you that you could escape given another opportunity to do so? Why?
  - Answers will vary.
3. What key themes regarding sow and piglet care did you see throughout the clues?
  - Pig health, nutrition, and comfort.
4. How long do piglets remain in the farrowing barn?
  - Approximately 21 days, depending when producers wean their piglets.
5. Where will piglets go next?
  - To a nursery.
6. Why was it essential we worked to get the piglets out of the farrowing barn today?
  - They will eventually need food beyond milk. Additionally, they could outgrow their facilities and begin to fight with one another or place burden the facilities.

Ask the following review questions for discussion:

1. Make a prediction as to why there are multiple barns in pork production operations corresponding to various phases of life. What are the benefits of having farrowing barns, nurseries, and growing/finishing barns?
  - Multiple facilities allow producers to specialize in each phase of production, optimizing pig care.



2. How do farrowing crates protect sows and their piglets?
  - Crates ensure piglets are not crushed by their mothers and also allow piglets more ready access to her milk.
3. Compare and contrast the two types of breeding Clue #3 mentions: artificial and natural insemination. What might be some advantages and disadvantages to each?
  - Artificial insemination allows producers to select for specific desirable genetic traits but can be expensive. Natural insemination is simpler but limits the genetic selection and can present management problems if boars are aggressive.
4. Why would sows have higher nutritional needs during times of pregnancy and lactation?
  - Sows need energy for fetal development and increased milk production.
5. What are some specific group management techniques pork producers use to care for the well-being of sows and piglets?
  - Separating sows and piglets, zone heating and cooling, controlled breeding, helping to induce labor, administering iron shots to piglets after birth, and ensuring pigs drink colostrum.
6. Predict how biosecurity (managing barn cleanliness and diseases) benefits the pig herd.
  - Biosecurity methods such as wearing protective rubber boots and sanitizing barns in-between litters of sows helps minimize the spread of diseases and ensures overall pig health.
7. What evidence did you find along your escape path to answer the question, “How does grouping piglets and raising them in farrowing barns enhance their chance to survive and reproduce?”
  - Answers will vary.

## Part 2 (Optional): Attend a Virtual Field Trip

Biosecurity is a procedure to protect animals against disease. Farmers limit travel to their pig barns by practicing biosecurity. This ensures they can raise their pigs in a safe and healthy environment.

Virtual Field Trips allow farmers to open their barn doors to show students what happens inside. The farmer uses a tablet to connect with classrooms to be a part of a live, video-chat allowing students to have their questions answered in real time.

Visit the Nebraska Farm Bureau Foundation website, [www.nefbfoundation.org/educators/get-involved/virtual-field-trips](http://www.nefbfoundation.org/educators/get-involved/virtual-field-trips), to see a list of upcoming Virtual Field Trips and to sign up for a time to attend. If you have questions, please contact Nebraska Farm Bureau Foundation at [foundationforag@nefb.org](mailto:foundationforag@nefb.org) or (402) 421-4747.

### SOURCES UTILIZED

Pork Checkoff

<https://www.pork.org>



### **NATIONAL AGRICULTURAL LITERACY OUTCOMES**

#### Science, Technology, Engineering & Mathematics

T4.9-12.d Evaluate the benefits and concerns related to the application of technology to agricultural systems (e.g. biotechnology).

T4.9-12.e Identify current and emerging scientific discoveries and technologies and their possible use in agriculture (e.g., biotechnology, bio-chemical, mechanical, etc.)

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_ Due: \_\_\_\_\_

## WORKING JOURNAL

*Instructions: The key question you're seeking to answer through the farrowing barn escape room is, "How does grouping piglets and raising them in farrowing barns enhance their chance to survive and reproduce?" As you complete each clue, record the "move-on code" you uncover and the new evidence gained. This working journal must be complete in order to have escaped.*

<b>Key Question: How does grouping piglets and raising them in farrowing barns enhance their chance to survive and reproduce?</b>		
<b>Clue Topic</b>	<b>Move On Code</b>	<b>Evidence Gained</b>
<i>Clue 1: Piglet birthing</i>		
<i>Clue 2: Sow care</i>		
<i>Clue 3: Breeding</i>		
<i>Clue 4: Nutrition</i>		
<i>Clue 5: Litter management</i>		
<i>Clue 6: Pig health</i>		
<i>Clue 7: Weaned &amp; moving on</i>		

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<b>Key Question: How does grouping piglets and raising them in farrowing barns enhance their chance to survive and reproduce?</b>		
<b>Clue Topic</b>	<b>Move On Code</b>	<b>Evidence Gained</b>
<i>Clue 1: Piglet birthing</i>	<b>21</b>	<i>Answers may vary: Separated crates provides safety for pigs.</i>
<i>Clue 2: Sow care</i>	<b>seat</b>	<i>Answers may vary: Barns allow for variable temperature to best suit the pigs' needs.</i>
<i>Clue 3: Breeding</i>	<b>8</b>	<i>Answers may vary: Different breeding techniques allow for desirable traits to be selected for.</i>
<i>Clue 4: Nutrition</i>	<b>soybeans</b>	<i>Answers may vary: Grouping pigs allows for specialized ration control for sows.</i>
<i>Clue 5: Litter management</i>	<b>comfort</b>	<i>Answers may vary: Group management practices like giving iron shots promotes pig survivability.</i>
<i>Clue 6: Pig health</i>	<b>biosecurity</b>	<i>Answers may vary: Sanitation through biosecurity promotes pig health.</i>
<i>Clue 7: Weaned &amp; moving on</i>	<b>escape</b>	<i>Answers may vary: Through every step of production, pigs are well cared for by grouping them.</i>

# Farrowing Barn Introduction Reading

As in any species, the first step in a pig's lifestyle is birth. The process of a female pig giving birth to piglets or baby pigs is called farrowing. Young female pigs that have not yet given birth to a litter of piglets are called gilts; once they have given birth they transition to being called sows. The gestation length of sows is approximately 114 days (about 3 weeks, 3 months, 3 days). Gilts and sows are bred using one of two methods: "natural mating" or "artificial insemination." In natural matings, a full grown male pig, or boar, is introduced to a female in a penned area. In artificial insemination, semen is collected from boars and used to breed female pigs. This method of breeding, which is being utilized by the majority of breeders in the pork industry allows producers to take advantage of genetic choices.

There are eight major breeds of pigs: Berkshire, Chester White, Duroc, Hampshire, Landrace, Poland China, Spotted Swine, Yorkshire. Each of these breeds have unique markings and characteristics, such as whether their ears droop or stand naturally upright.

From the time piglets are born, pork producers ensure that they are well cared for. They are housed in special barns, known as farrowing barns, with their mothers. Here, they remain in farrowing stalls, which are specially-designed pens that allow them to safely rest next to their mothers and drink milk. Heat lamps in the farrowing barn and specialized flooring keeps the piglets warm. Immediately after birth, it is essential that piglets drink colostrum, which is the sow's first milk from their mothers or are supplemented with colostrum; this is high in immunological value. Additionally, while in the farrowing barn, producers care for the piglets' health by administering iron shots. An average sow will give birth to a litter containing 8 to 12 piglets, about twice a year. Sometimes, producers may give an injection to induce farrowing, but often, the sow will go into labor on her own. Sows typically remain in the herd to give birth to 7 litters.

## VOCABULARY:

**gestation:** pregnancy period of a sow - 114 days (3 month, 3 weeks, and 3 days)

**gilt:** young female pig that has not yet given birth to a litter of piglets

**sow:** full grown female pig that gives birth or farrows piglets

**piglet:** a newborn/young pig

**boar:** full grown male pig

**farrow:** the act of giving birth to baby pigs

**litter:** group of piglets that a sow gives birth to at one time

**farrowing barn:** climate controlled barn where piglets are born

## CLUE #1

De-coder

<b>1</b> A	<b>2</b> B	<b>3</b> C	<b>4</b> D	<b>5</b> E	<b>6</b> F	<b>7</b> G	<b>8</b> H	<b>9</b> I	<b>10</b> J	<b>11</b> K	<b>12</b> L	<b>13</b> M
<b>14</b> N	<b>15</b> O	<b>16</b> P	<b>17</b> Q	<b>18</b> R	<b>19</b> S	<b>20</b> T	<b>21</b> U	<b>22</b> V	<b>23</b> W	<b>24</b> X	<b>25</b> Y	<b>26</b> Z

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## CLUE #6

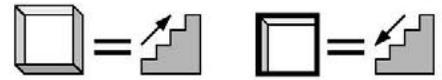
Morse CODE DE-CODER

A	•—	J	•— — —	S	•••	1	•— — — —
B	—•••	K	—•—	T	—	2	••— — —
C	—•—•	L	•—••	U	••—	3	•••— —
D	—••	M	— —	V	•••—	4	••••—
E	•	N	—•	W	•— —	5	•••••
F	••—•	O	— — —	X	—••—	6	—••••
G	— —•	P	•— —•	Y	—•— —	7	— —•••
H	••••	Q	— —•—	Z	— —••	8	— — —••
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CLUE #4

Maze

1/2



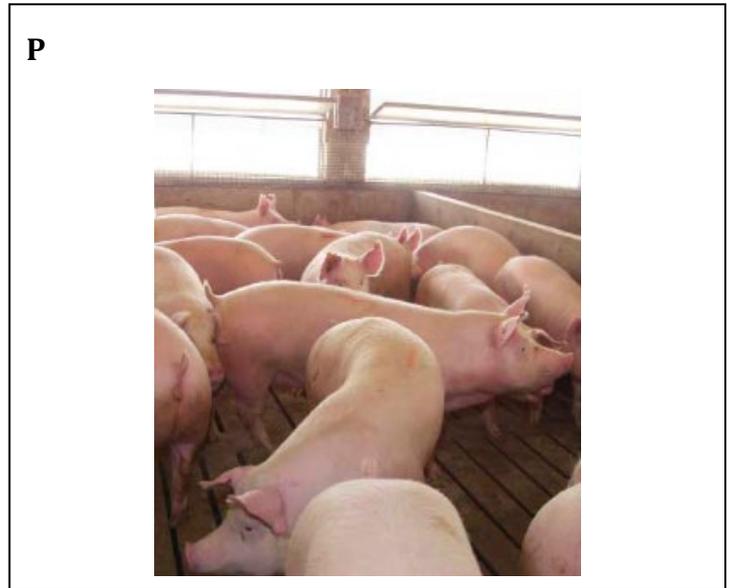
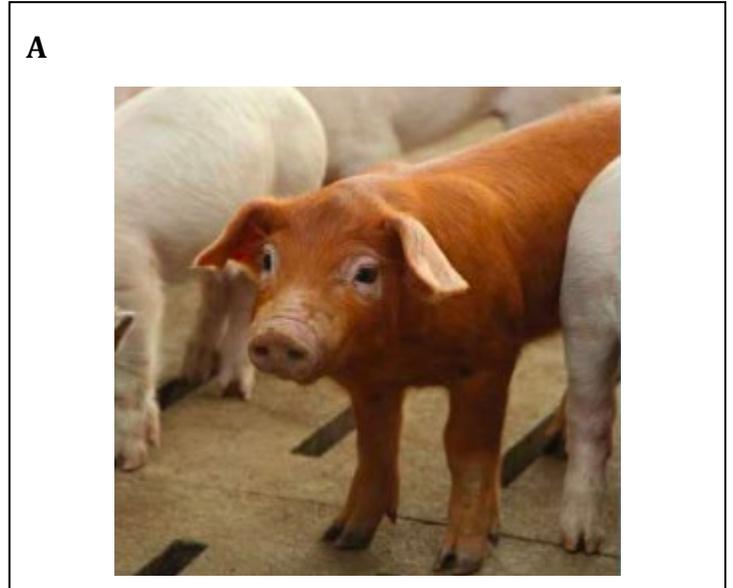
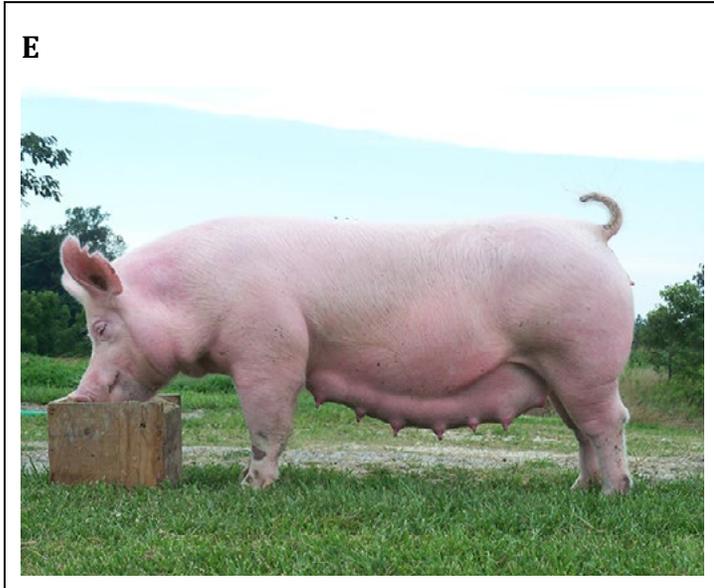
noyos, nrocorns, enand  
oitaoa, nr, n, sb, and  
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tar, d, ns, fof, ybeans, sand  
rr, def, ons, soeans, nd  
adef, di, ons, yo, yans, and  
s, f, e, tions, ybean, and  
sws, err, ana, ebeans, and, o  
Sows, a, at, dt, seans, ot, ot  
o, si, ere, eo, snans, doth  
ne, ir, nt, nr, t, sn, s, an, ahe  
e, ir, tun, reh, an, an, rs, er  
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t, o, s, o, d, n, a, a, n, e, f, f, f, o, f, t, r, i  
h, s, d, n, a, d, e, e, f, y, f, f, n, u, t, r  
e, b, a, s, i, c, e, n, e, r, g, y, n, n, u, t, r, i  
b, a, c, i, c, e, n, e, r, y, f, u, n, u, t, r, i, e  
b, a, e, c, n, e, n, e, r, g, y, f, e, t, u, t, r, i, e, n



s s n o y b n a e a n s , r t o o t a  
 n o i o i o n s y b e a , a e h d o r  
 o i t a t i o s o y b e a n t o d n o d  
 i t a r a t i o y b e a n t o d n a n e d  
 t a r r a o y b e a n s o d n a a f  
 i t a r a t i o n a a s d d n a n e  
 o i t a t i o n s r d e f o d f e r  
 n o i t i s n s r d e f f e r a r a  
 s n o i o n s o e r r f e a r a a  
 s s n s e f f r a e r e a s w s  
 o s e f e a s r a s w o w o w  
 f o i r d e r a s w o s w o S o S o  
 h f p i , g f a s w o S o w a S . y . S  
 g h , g n g e r a w o S . S a d a d a y .  
 i g i g n i , g e s w s y a d y S . S  
 h i h n i s i n r a . y a d h c h S o  
 h h s r n i n S . y a d h c a c h d  
 e r e r u i s i o S . y . S c a e a c h  
 r a r n n r u r s S . m a e e h m i  
 a a n e n n u s t n t s c h s e i t  
 s n e h e n n u n e n t s e m i t  
 s n s . W h e n r u i e n t s e m i e  
 e i n . W h e n n r i e n t l t e l  
 a t e W W h e n n u t r n t m u l t l p  
 r o t n W h e n i s r u s t s m u l t i  
 e r e i n n n n i s n f o s t n u o  
 p n . n , g n i n n f o s t n m  
 h n p s g i g s n u n t a o e s t a  
 i g i n s g i p , g , e r e a t e r  
 g h i p s g s n e e d g r e a t e r

**CLUE #7**

*Instructions: Cut apart and mix in random order before giving to students.*



## ESCAPE ROOM CLUES

Instructions: Cut each clue into a separate piece and seal each piece into an individual envelope.

#1

If you don't escape the room, your pigs will never take a trip. So you'd better take 4:19 and watch this clip:

20, 8, 5

2, 9, 18, 20, 8, 9, 14, 7

16, 18, 15, 3, 5, 19, 19

15, 6

1

16, 9, 7, 12, 5, 20

As you watch the video, don't fall into a slumber. There's something that will lead you to your next clue. Hint: it's a number. How many days does the piglet stay in the farrowing barn? This is your move-on code.

#2

You arrived here by learning pigs remain in the farrowing barn for 21 days before being weaned and moved to a nursery. Knowledge of what happens during these 21 days in the farrowing barn will be the key to your escape. Answer these questions and you'll be on your way:

\_\_\_ 1. Young, female pigs that have not given birth yet, but will be bred and give birth (when they become 'sows') are called:

d. heifers

e. gilts

f. boars

g. girls

\_\_\_ 2. There are different types of flooring in the farrowing barns. Why is this?

r. To ensure the pig farmers don't slip.

s. For easy cleaning.

t. To keep the sows and piglets at different, yet comfortable temperatures.

u. It's less expensive to have multiple floorings.

\_\_\_ 3. How are sows cooled during hot temperatures to ensure comfort?

q. Ice is placed in the waterers.

r. They are given cool baths.

s. The climate-controlled building contains a cooling system.

t. Doors are left open to allow for maximum air flow.

\_\_\_ 4. Sows are kept in \_\_\_\_\_ to ensure the safety of pig farmers, piglets, and themselves.

a. stalls or crates

b. squeeze chutes

c. an open-range pen

d. pens with 3-5 other sows

Use these letters to unscramble your move-on code. Hint: even pigs get tired and like to take a \_\_\_\_\_.

### #3

In order to have piglets, sows are bred utilizing one of two methods. Natural insemination is where an adult, intact male pig, called a boar, is exposed to a female pig of breeding age. Another is called artificial insemination where boar semen is used to breed females at specific times during her cycle. Artificial insemination is used to gain genetic advantages and maximize desirable breed and animal traits. Speaking of pig breeds, how many major breeds are there? The answer to the riddle will reveal this bit of knowledge and lead you to your next clue.

I am a very interesting number:  
I sound like the past of the solution to hunger.  
They say I am perfect, but I'm not a ten.  
Thrice of me is twice a dozen.  
I become infinite when I am asleep.  
I still look the same when I'm upside down.  
I am the cube of the littlest prime.

How many major breeds of pigs are? This is your move-on code.

### #4

You got here by discovering there were 8 major breeds of pigs. Those breeds are: Chester White, Duroc, Landrace, Poland China, Spotted Swine, Berkshire, Hampshire, and Yorkshire. Each of these breeds originated from various parts of the world. Regardless of their origin, however, all mother pigs have the same basic needs. Though pigs possess monogastric (one-chambered) stomachs that function just like humans', they don't eat quite the same as us. Follow the maze to discover what they eat and uncover your move-on code.

What do pigs eat as a major source of protein? This is your move-on code.

### #5

As we have learned, sows are kept comfortable through zone heating and cooling, farrowing stalls, and are fed a healthy diet of corn, soybean meal, and added nutrients. All of these factors are essential to the birthing of healthy litters of piglets. Showcase more knowledge of sow farrowing to move on:

Sows are \_\_\_\_\_ for 114 days (approximately 3 months, 3 weeks, 3 days).

Sometimes, an injection is given to induce \_\_\_\_\_.

Piglets arrive in \_\_\_\_\_ that range in size from 8-12 piglets.

It is essential that piglets drink \_\_\_\_\_ at the time of birth.

Farrowing stalls keep the sows and piglets separate to ensure the piglets remain \_\_\_\_\_, yet close enough the piglets always have access to nutrient-dense sow milk.

After pigs are birthed, iron shots are \_\_\_\_\_.

\_\_\_\_\_ typically remain in the herd to give birth to 7 litters.

In relation to the sow and piglets, what are pig producers primarily concerned about in the farrowing barn before, during, and after birthing? Use the shaded letters to determine the move-on code: \_\_\_\_\_

## #6

You've learned about pig comfort, now let's learn about how the barns are kept clean.

Sanitized barns are good for the pigs; keep reading to see what I mean.

Producers bring in pressure washers and spray down the floors.

It's nothing out of the ordinary, just a part of normal chores.

The slatted floors also help to keep the sows and piglets healthy.

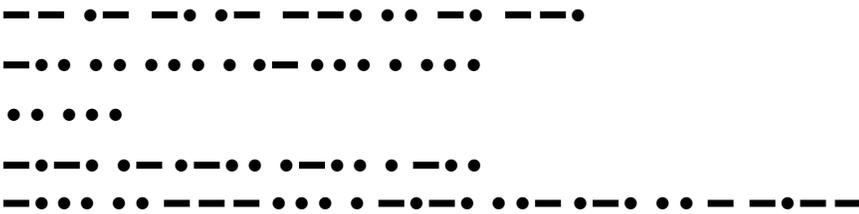
In order to escape this barn, you will need to be stealthy.

There's a code not many people know these days,

But it can still help you communicate in a few different ways.

It uses dots and dashes in combinations short and long,

If you use these dots and dashes correctly, you won't go wrong.

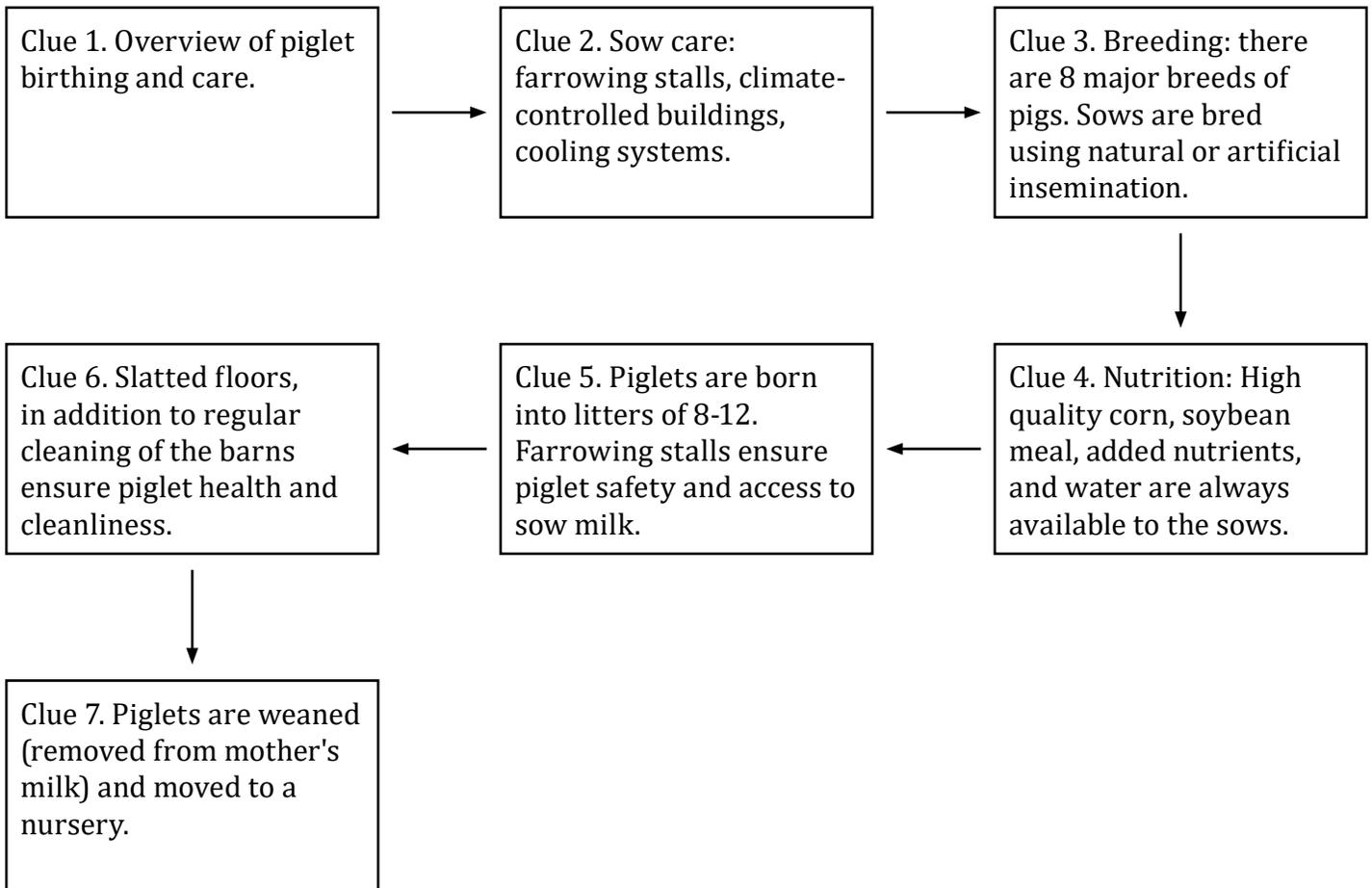


What is the process of managing barn cleanliness and diseases called? This is your move-on code.

## #7

Congratulations - you're almost there! Your piglets can almost leave the farrowing barn to head to the next phase of production, the nursery. To ensure you get them to the right place next, place these diagrams of a pig's life span in order. Let your instructor know when you've got them in order; it will provide your move-on code and be the key to your escape.

## ESCAPE ROOM KEY



What evidence did you gain from this clue that grouping piglets and raising them in farrowing barns enhances their chance to survive and reproduce?

## #1

If you don't escape the room, your pigs will never take a trip. So you'd better take 4:19 and watch this clip:

20, 8, 5

2, 9, 18, 20, 8, 9, 14, 7

16, 18, 15, 3, 5, 19, 19

15, 6

1

16, 9, 7, 12, 5, 20

As you watch the video, don't fall into a slumber. There's something that will lead you to your next clue. Hint: it's a number. How many days does the piglet stay in the farrowing barn? This is your move-on code.

## #1 Teacher Instructions

Students should use the de-coder to translate the numbers into a message.

20, 8, 5 **THE**

2, 9, 18, 20, 8, 9, 14, 7 **BIRTHING**

16, 18, 15, 3, 5, 19, 19 **PROCESS**

15, 6 **OF**

1 **A**

16, 9, 7, 12, 5, 20 **PIGLET**

This should lead students to a 4:19 YouTube video entitled, "The Birthing Process of a Piglet," produced by the Pork Checkoff. Important content found in the video: In the farrowing barn, piglets are born. Piglets will remain in the farrowing barn about 21 days. There 2 different types of flooring in the barn to keep the sows and piglets at different temperatures where they are comfortable. The sows are kept in separate stalls from the piglets to protect the piglets and the people caring for them. Sows need to eat so much (16 pounds) each day to provide adequate milk to their piglets. Some of the job duties of pig caretakers include checking on pigs, cleaning and disinfecting barns and moving pigs.

While watching the video, students must listen for the number 21 (approximate days piglets are in a farrowing barn before moving to the nursery).

**Move on code: 21**

## #2

You arrived here by learning pigs remain in the farrowing barn for 21 days before being weaned and moved to a nursery. Knowledge of what happens during these 21 days in the farrowing barn will be the key to your escape. Answer these questions and you'll be on your way:

\_\_\_ 1. Young, female pigs that have not given birth yet, but will be bred and give birth (when they become 'sows') are called:

- d. heifers
- e. gilts
- f. boars
- g. girls

\_\_\_ 2. There are different types of flooring in the farrowing barns. Why is this?

- r. To ensure the pig farmers don't slip.
- s. For easy cleaning.
- t. To keep the sows and piglets at different, yet comfortable temperatures.
- u. It's less expensive to have multiple floorings.

\_\_\_ 3. How are sows cooled during hot temperatures to ensure comfort?

- q. Ice is placed in the waterers.
- r. They are given cool baths.
- s. The climate-controlled building contains a cooling system.
- t. Doors are left open to allow for maximum air flow.

\_\_\_ 4. Sows are kept in \_\_\_\_\_ to ensure the safety of pig farmers, piglets, and themselves.

- a. stalls or crates
- b. squeeze chutes
- c. an open-range pen
- d. pens with 3-5 other sows

Use these letters to unscramble your move-on code. Hint: even pigs get tired and like to take a \_ \_ \_ \_ .

### #2 Teacher Instructions

For clue #2, students must answer the multiple choice questions. Answers to the questions are:

1. **E**

2. **T**

3. **S**

4. **A**

Students must unscramble the multiple choice answers, "ETSA," to read, "SEAT."

**Move on code: seat**

### #3

In order to have piglets, sows are bred utilizing one of two methods. Natural insemination is where an adult, intact male pig, called a boar, is exposed to a female pig of breeding age. Another is called artificial insemination where boar semen is used to breed females at specific times during her cycle. Artificial insemination is used to gain genetic advantages and maximize desirable breed and animal traits. Speaking of pig breeds, how many major breeds are there? The answer to the riddle will reveal this bit of knowledge and lead you to your next clue.

I am a very interesting number:  
I sound like the past of the solution to hunger.  
They say I am perfect, but I'm not a ten.  
Thrice of me is twice a dozen.  
I become infinite when I am asleep.  
I still look the same when I'm upside down.  
I am the cube of the littlest prime.

How many major breeds of pigs are? This is your move-on code.

### #3 Teacher Instructions

Students must solve the riddle contained within the clue. The answer is 8; representative of the fact that there are 8 major breeds of pigs.

**Move on code: 8**

### #4

You got here by discovering there were 8 major breeds of pigs. Those breeds are: Chester White, Duroc, Landrace, Poland China, Spotted Swine, Berkshire, Hampshire, and Yorkshire. Each of these breeds originated from various parts of the world. Regardless of their origin, however, all mother pigs have the same basic needs. Though pigs possess monogastric (one-chambered) stomachs that function just like humans', they don't eat quite the same as us. Follow the maze to discover what they eat and uncover your move-on code.

What do pigs eat as a major source of protein? This is your move-on code.

### #4 Teacher Instructions

Students will follow the maze to uncover the following message related to pig nutrition: *Sows are fed rations of corn, soybeans, and other nutrients. Corn is the basic energy feed and soybeans are high in protein. When nursing, pigs need greater amounts of nutrients multiple times each day.*

**Move on code: soybeans**

## #5

As we have learned, sows are kept comfortable through zone heating and cooling, farrowing stalls, and are fed a healthy diet of corn, soybean meal, and added nutrients. All of these factors are essential to the birthing of healthy litters of piglets. Showcase more knowledge of sow farrowing to move on:

Sows are \_\_\_\_\_ for 114 days (approximately 3 months, 3 weeks, 3 days).

Sometimes, an injection is given to induce \_\_\_\_\_.

Piglets arrive in \_\_\_\_\_ that range in size from 8-12 piglets.

It is essential that piglets drink \_\_\_\_\_ at the time of birth.

Farrowing stalls keep the sows and piglets separate to ensure the piglets remain \_\_\_\_\_, yet close enough the piglets always have access to nutrient-dense sow milk.

After pigs are birthed, iron shots are \_\_\_\_\_.

\_\_\_\_\_ typically remain in the herd to give birth to 7 litters.

In relation to the sow and piglets, what are pig producers primarily concerned about in the farrowing barn before, during, and after birthing? Use the shaded letters to determine the move-on code: \_\_\_\_\_

## #5 Teacher Instructions

Students will answer the fill in the blank questions then unscramble the shaded letters to discover the move on code. Question answers:

Sows are **pregnant** for 114 days (approximately 3 months, 3 weeks, 3 days).

Sometimes, an injection is given to induce **farrowing**.

Piglets arrive in **litters** that range in size from 8-12 piglets.

It is essential that piglets drink **colostrum** at the time of birth.

Farrowing stalls keep the sows and piglets separate to ensure the piglets remain **safe**, yet close enough the piglets always have access to nutrient-dense sow milk.

After pigs are birthed, iron shots are **administered**.

**Sows** typically remain in the herd to give birth to 7 litters.

Shaded letters: **t, o, r, c, f, m, o**

In relation to the sow and piglets, what are pig producers primarily concerned about in the farrowing barn before, during, and after birthing? Use the shaded letters to determine the move-on code:

**comfort**

**Move on code: comfort**

## #6

You've learned about pig comfort, now let's learn about how the barns are kept clean.

Sanitized barns are good for the pigs; keep reading to see what I mean.

Producers bring in pressure washers and spray down the floors.

It's nothing out of the ordinary, just a part of normal chores.

The slatted floors also help to keep the sows and piglets healthy.

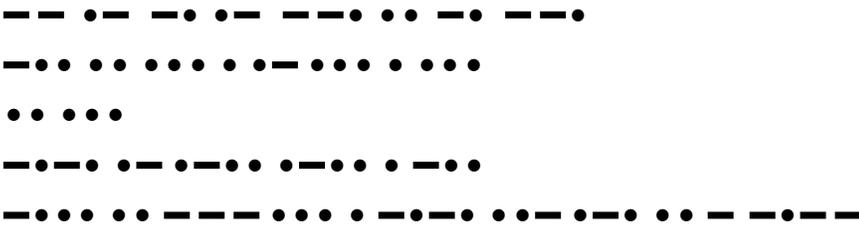
In order to escape this barn, you will need to be stealthy.

There's a code not many people know these days,

But it can still help you communicate in a few different ways.

It uses dots and dashes in combinations short and long,

If you use these dots and dashes correctly, you won't go wrong.



What is the process of managing barn cleanliness and diseases called? This is your move-on code.

## #6 Teacher Instructions

Students will read the rhyme and then use the morse-code de-coder to uncover the following message related to pig health:

**Managing  
diseases  
is  
called  
biosecurity**

**Move on code: biosecurity**

## #7

Congratulations - you're almost there! Your piglets can almost leave the farrowing barn to head to the next phase of production, the nursery. To ensure you get them to the right place next, place these diagrams of a pig's life span in order. Let your instructor know when you've got them in order; it will provide your move-on code and be the key to your escape.

## #7 Teacher Instructions

Students should put the 6 diagrams in order. The pictures are coded and spell the word, "ESCAPE." When students realize this, they have completed the challenge!

**Move on code: escape**