

Pork STEM Challenge

Grade Level(s)

3rd

Estimated Time

30 minutes

Purpose

Students investigate why many farmers raise their pigs indoors while participating in a fun STEM challenge.

Materials

▪Book

My Family's Pig Farm <https://www.yumpu.com/en/document/read/63054669/my-familys-pig-farm> and available on our website.

▪Links

Website: www.linncoag.com -2020/21 virtual learning- October

Ohio Pig Farm video:

https://www.youtube.com/watch?v=rAw7Fs_IAW4&feature=youtu.be

Intro video: <https://www.youtube.com/watch?v=S1v4OxsEW3U&t=38s>

▪Worksheets

Pig STEM challenge blueprint worksheet (available in kit or on website)

▪Other

Spaghetti: 10 noodles per student

Marshmallows (gelatin is a pork product): 10 marshmallows per student

Vocabulary

Pork: meat from pigs

Biosecurity: procedures intended to protect humans or animals against disease

Omnivore: an animal or person that eats food of both plant and animal origin

Farrowing barn: space designed for sows and piglets during birth

Finishing barn: the main purpose of this stage in production is to allow the pigs to become fully weaned and prepares them for the final stage of pork production

Nursery barn: space designed for weaned piglets before transitioning to finishing barn

Interest Approach – Engagement

1. Ask the following questions:

-What do you know about pigs?

2. Read *My Family's Pig Farm*

<https://www.yumpu.com/en/document/read/63054669/my-familys-pig-farm>

3. Ask the following questions:

- Why do we raise pigs?
- How do farmers care for their pigs?
- What do pigs eat?
- Why might pigs live indoors?

Background - Agricultural Connections

Pork is the most widely consumed meat in the world. Bacon, sausage, ham, pork chops, ribs, pepperoni, and hot dogs are all made from pork.

Other valuable products from pigs include insulin for the regulation of diabetes, valves for human heart surgery, suede for shoes and clothing, and gelatin for foods and non-food uses.

In this lesson, students will read a book about raising pigs and discuss different types of housing and why farmers might choose to raise their pigs inside (predators, diseases, weather, etc.)

Procedures

1. Show intro video available on our website if not participating in zoom presentation.
2. Watch Ohio Pig Farm video https://youtu.be/rAw7Fs_IAW4

- Review Video

- *What are some things you noticed or learned from this video? Where do pigs live? What is their food made of? What do we call their food? How big are full grown pigs? How long does it take for them to be market ready?*

3. Activity

Introduce activity

- *Now that we've learned about pigs, let's put that to the test. Humans rely on a few key items to survive, what are they? (food, water and shelter) Who provides these things for us? As kids, our parents. Who provides these for pigs? FARMERS. We are going to be farmers and provide these things for our pigs in building them a barn.*

Students will act as farmers, scientists and engineers and build a barn for their pig, providing shelter, food and water.

- 1. Give instructions (1-2 minutes)**

- *Scientists, engineers and farmers have worked very hard to provide the best place possible, for pigs to be raised. Pigs live in barns for this reason. We are going to make our pig a barn and provide them shelter, food and water! First, take out a piece of paper and pencil. We must think like an engineer and design our barn, this will be our **blueprint!** (3-5 minutes) Give your blueprint a **title, write your name and begin designing.** After your blueprint is complete, we will build our barns. *The blueprint can be a stand-alone lesson if you don't feel comfortable building the barn due to COVID.
 - *STEM Challenge: Pass out marshmallows and spaghetti noodles. The barn must stand, and you can only use the supplies given (10 spaghetti noodles and 10 marshmallows).*
 - *Marshmallows are a pork product. **Gelatin, an ingredient in marshmallows, is a protein made from animal products.****

2. Students write up blueprint

3. Give each student spaghetti sticks and marshmallows

4. Students construct barns

Conclusion

- **Review that pigs are cared for by farmers who raise pigs in barns, safe from predators, weather and disease.**

Quiz: Ask the following questions to review:

- What do we call the meat that comes from pigs? (pork)
- Name two reasons why pigs would be kept in barns? (temperature, diseases, predators)
- What is a mom pig called? (sow)
- What is a baby pig called? (piglet)
- What is the first stage on a pig farm called? (farrowing)
- What is the term we use to call a group of piglets? (litter)
- How much does a piglet weigh at birth? (2-3 lbs)
- What is the barn called where piglets go once weaned? (nursery)
- How much does a weaned piglet weigh? (15-20 lbs)
- What is pig feed made of? (corn, soybeans, micronutrients)
- Where is the feed kept? (bin)
- Name the only animal that will not over eat? (pig)
- What is the final barn called before they go to market? (finishing barn)
- How old are pigs when they go to market? (6 months)
- How much do pigs weigh at market? (280 lbs)

Organization Affiliation

Lesson adapted by Morgan Hibbs from Siouxland AITC original plan.

Agriculture Literacy Outcomes

T2.3-5. e. Understand the concept of stewardship and identify ways farmers/ranchers care for soil, water, plants and animals.

T3.3-5.b. Diagram the path of production for a processed product, from farm to table.

Iowa/ Common Core Standards

3-LS1-1. Develop a model to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-LS2-1. Construct and argument that some animals form groups that help members survive.

SS.3.13 Identify how people use natural resources, human resources, and physical capital to produce goods and services.