



PIGS, PORK, & BIOSECURITY

Grade Level

K-8

Length of Lesson

30 minutes

Objective

Students will be able to explain how easily germs can spread and what livestock biosecurity is.

Materials

- Plush pigs
- Dried corn kernels and soybeans for pig feed
- Bowls or small buckets
- [Pig brushes](#)
- [Glo germ powder](#)
- Black light flashlight
- Hand sanitizer
- Rubber gloves

Standards

NGSS

K.LS1.1; K.ESS2.2;
K.ESS3.1; K.ESS3.3;
2.LS4.1; 2.ETS.1;
3.LS4.3-4; 4.LS1.1;
MS.LS2.2; MS.LS2.4

Lesson Summary

This lesson is designed to give students a visual representation of how quickly germs can be spread and in what ways, and why pig farmers practice important biosecurity measures on their farms to keep their livestock safe.

This lesson adapted from a lesson by [Champaign County Ag in the Classroom](#).

Suggested Sequence of Events:

1. **Set Up:** Sprinkle Glo Germ on the stuffed pig before students enter the classroom. You can also sprinkle the Glo Germ on the floor or on any materials you and your students will be using/handling in this activity.
2. Read through the [IAITC pork-themed nonfiction text resources](#) to learn more about pigs and pork. Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
 - Divide students into small groups and tell them they need to get their pig ready for a show.
 - Give each group a stuffed pig, a pig brush, corn kernels, soybeans, and an empty bowl/bucket.
 - Have each student brush their pig and mix together the corn kernels and soybeans in the bowl for the pig feed.
 - After all the materials have been put away, tell the students that there has been a virus in the barn and their pigs may have been affected.
 - Use the blacklight and walk around the room shining the light over their hands, equipment, and all over other surfaces.
 - Have students wash their hands and then use the black light flashlight on their hands again to see the benefits of washing hands.
4. If you had contact and then went to the show, how might that affect everyone there? What might happen if there are concessions being served? Use these questions, along with the discussion questions sheet provided, to have a whole group discussion of the activity.

TEACHER RESOURCES

Background Information:

Diseases can be spread by direct contact, indirect contact, aerosols or droplets, oral ingestion, or vectors. Indirect contact transmission is the spread of pathogens through contact with areas where animals live and roam or objects or surfaces contaminated by an infected animal. Objects or surfaces that may become contaminated with pathogens are called fomites. Some examples of fomites are boots, cages, needles, bedding, clothing, vehicles, and restraint devices. Ingestion, or oral transmission, occurs when disease-causing agents are ingested from contaminated food or water by licking or chewing contaminated objects in the environment.

Biosecurity on a Pig Farm:

Biosecurity is the protection of humans or animals against diseases and other harmful microorganisms. While every farm's biosecurity plan will look different from one another, there are some common protocols that all farmers have in their plans:

- Everyone on the farm is provided with the opportunity to be trained and educated in all procedures on the farm.
- Creating a line of separation that separates the clean inside of the barn from the dirty, or contaminated, outside.
- Requiring employees on most pig farms to change into specific clothing and footwear and require hand washing.
- Having designated areas for incoming supplies to be disinfected before entering the barn.

Extension Ideas

- Introduce the word "livestock" to your students and talk about why farmers raise animals.
- Invite a pig farmer into your classroom to talk with your students. How do farmers practice biosecurity on their farms to ensure their pigs are safe and healthy?
- Use the [Facts About Pigs Kahoot](#) from Champaign County AITC as an introductory quiz to get students thinking about pigs and the environmental impact of human activity.
- Read through the playful nonfiction children's book "[Pigology: The Ultimate Encyclopedia](#)" by Daisy Bird to learn more fun facts about pigs! Find more pig-themed books [here](#).
- Learn more about all the by-products we get from pigs. Why are pigs so important to us?
- Learn about the history of pigs in the United States. When were they introduced to North America? Dig deeper and learn about domestication of the wild boar and selective breeding to become the pigs they are today.
- Have students share their favorite pork recipes. Dig deeper and compare pork dishes from around the world.
- Learn about what pigs eat and how they are cared for by farmers. Do piglets eat the same food as adult pigs?
- Research pig breeds in the United States and compare to pig breeds around the world.
- Go to [agintheclassroom.org](#) to contact your County Ag Literacy Coordinator for free classroom sets of IAITC Ag Mags!



DISCUSSION QUESTIONS

Use the bolded discussion questions below to get students thinking about the ways humans can decrease and prevent the spread of bacteria and viruses, a.k.a. germs!

What are some ways to prevent direct contact transmission:

- Isolate sick animals
- Wear gloves when working with sick animals
- Wash your hands after having contact with animals or being in animal areas, even if you did not touch the animals.

What are some ways to prevent indirect contact transmission:

- Avoid sharing equipment
- Clean and disinfect equipment when sharing is necessary
- Wash boots and clothing after animal contact
- Wash your hands after having contact with animals or being in animal areas, even if you did not touch the animals.

What are some ways to prevent aerosol transmission:

- Increase the distance between sick animals and healthy animals
- Wear respiratory protection when working with sick animals
- Provide fresh air to animals and people
- Decrease humidity and odor build-up in barns
- Sick humans should stay away from animal barns

What are some ways to prevent oral transmission:

- Wash your hands:
 - After being in animal areas and/or having contact with animals
 - After cleaning pens out or contact with manure
 - After going to the bathroom
 - Before preparing or handling food
- Cook meat to the appropriate temperature
- Store food at the proper temperature

What are some ways to prevent vector-borne transmission:

- Use insect control products
- Work with a veterinarian to check and treat animals for parasites
- Prevent standing water
- Check for ticks on people and animals