

What Can Pigs Teach Us About Adaptation?

Genetic variation in pigs allows them to adapt to environmental changes and increase survival.

Objectives

- Students will determine if feral pigs are an invasive species.
- Students will explain how the traits of feral and wild pigs aided their population growth.
- Students will simulate the population growth of wild pigs in the southern United States.
- Students will make predictions for what factors will affect wild pig populations.
- Students will develop a plan for controlling wild pig populations.

Supplies/Resources

- Article on wild pigs (digital version available)
- Student lab worksheet
- Colored wood tiles or paper chips (200) and bag for each group

Instructions/Teacher Suggestions

1. Ask students to read the article on wild pigs and complete the student lab worksheet.
2. For the population simulation activity, you may use the kit available by request or you may create your own:
 - Each “grab bag” should contain 200 small wooden tiles, similar to Scrabble tiles. Colored paper be used as well.
 - Color 100 of the tiles blue (male) and 100 of the tiles red (female).
 - Draw a black X on 40 blue tiles and 40 red tiles. This represents a potential mortality rate of 40 percent in the population without control. Pigs and deer have relatively low mortality rates, but the birth rate and frequency of pigs will dramatically impact how quickly their population grows.
3. Students may be asked to create a graph for each simulation.
4. Ask students to write an argument of whether or not a pig is an invasive species and how their presence affects other components of the ecosystem where they are present.

Next Generation Science Standards

MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals’ probability of surviving and reproducing in a specific environment.

MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

ELA/Language Arts Standards

RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts.

RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

WHST.6-8.1 Write arguments to support claims with clear reasons and relevant evidence.

WHST.6-8.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

