

Ohio Science Education Standards Grade 7 -11:
Scientific Ways of Knowing

- Describe how the work of science requires a variety of human abilities and qualities that are helpful in daily life (e.g,reasoning, creativity, skepticism, and openness).

- Investigate how the knowledge, skills and interests learned in science classes apply to the careers students plan to pursue.
- Research the role of science and technology in careers that students plan to pursue.

Ohio farmers include family members and other team members. Jobs in agriculture today require specialized training and the use of advanced technology. Some jobs require knowledge gained through college degrees in areas of plant and animal sciences, engineering, business and communication. Other jobs require specialized skills learned through on-the-job training and experience with technology. People who get satisfaction from hard work, solving problems and working outdoors like to work on farms.

EACH YEAR, THERE ARE 50,000 US JOBS AVAILABLE IN THE FOOD, AGRICULTURE, AND NATURAL RESOURCE SYSTEM...

Research careers related to agriculture and farming to find how the knowledge, skills and interests learned in science classes apply to jobs on the farm. Check out the following sites to research agriculture careers. Students can create a human resource package for Maken Bacon Farms or another agricultural enterprise. What information do they need to write a job description that will entice workers to apply?

US Department of Agriculture; download posters of animal nutritionist, agricultural engineer, soil scientist, & environmental scientist
agriculture.purdue.edu/USDA/careers/index.html

Graph of available ag jobs
agday.org/tc/tc-career.html

Definitions and information on how to create job descriptions

en.wikipedia.org/wiki/Job_description

Meet two farmers; check out the latest technology GPS and GIS

campsilos.org/mod4/students/life.shtml

OHIO FARMERS FIND SOLUTIONS

Just like engineers, farmers must define and solve problems everyday. One of the solutions highlighted in this video relates to barn temperatures and animal comfort. Various cooling methods have been used successfully in barn structures. Methods often focus on exhaust ventilation fans or circulation fans which are used together with water cool cells or water misting. The barn in the video uses free moving baffles at one end of the barn which draw air in over a water cool cell when the fans are turned on.

Interview farmers to find out about cooling/heating systems used in a variety of barns. Research heating/cooling system principles and how those principles are applied in large barn structures.

Write a wikipedia article about heating and cooling found in hog barns in different climates.

RESOURCES AND LINKS

SPECIFIC INFORMATION FOR PIGS...

- pork.org

PRINCIPALS OF HEATING AND COOLING SYSTEMS...

- home.howstuffworks.com/heating-and-cooling-system-basics-ga.htm
- home.howstuffworks.com/heating-and-cooling-system-basics-ga1.htm

ENGINEERING CHALLENGE...

Trying some of the engineering challenges will show how reasoning, creativity, skepticism and openness are qualities that are valuable to farm careers. Find out more about agricultural engineers and the solutions they are working on. What are some of the specialty areas?