Agriculture—It Doesn't Just Happen

The Work of the Agricultural Research Service

Objective

Students will read about the Agricultural Research Service (ARS), locate ARS stations in Oklahoma on an Oklahoma map, use online resources to find out about ARS research and develop brochures and presentations describing the research.

Background

The Agricultural Research Service (ARS) is the chief scientific research agency for the US Department of Agriculture (USDA). The USDA established the ARS in 1953. ARS research develops solutions to problems related to food and agriculture. These problems range from protecting crops and livestock from costly pests and diseases to improving the quality and safety of agricultural commodities and products. ARS researchers work to find the best nutrition sources for humans, from infancy to old age. They also look for ways to sustain natural resources. Ensuring profitability for producers and processors while keeping costs down for consumers is another goal. In addition to serving this broad range of customers, ARS provides research to support federal action and regulatory agencies.

The agency's research is carried out through about 100 locations nationwide and a few key sites overseas. In Oklahoma, ARS sites are located in Lane (South Central Agricultural Research Laboratory), Woodward (Rangeland and Pasture Research), El Reno (Grazing lands Research), and Stillwater (Plant Science and Water Conservation Research). Approximately 2,000 of the 7,000 ARS employees are scientists.

The agency's national programs are divided among three major areas:

1. Animal Production, Product Value, and Safety—improving productivity, value, and safety of meat and dairy products and improving human lives through nutrition.
2. Natural Resources and Sustainable Agricultural Systems — developing new practices and technologies that conserve natural resources and balance agricultural production with environmental quality.
3. Crop Production, Product Value, and Safety—improving productivity, value, and safety of crops that are the economic backbone of US agriculture.

The goal of ARS is to lead America toward a better future through agricultural research and information. It is one of four agencies in USDA's research, education and economics mission area. The others are Cooperative State Research, Education and Extension Service, Economics Research Service, and National Agricultural Statistics Service.

Oklahoma Academic Standards

GRADE 6
Speaking and Listening: R.1,2,3; W.1,2. Research: R.1,2,3; W.1,2,3,4

GRADE 7
Speaking and Listening: R.1,2,3; W.1,2. Research: R.1,2,3; W.1,2,3

GRADE 8
Speaking and Listening: R.1,2,3; W.1,2. Research: R.1,2,3; W.1,2,3

Resources Needed

computer and/or library access

miscellaneous materials for presentations (poster boards, desks, microphones for interviews/news reports)

samples of products for research

Vocabulary

acronym—a word formed from the first letter of several words
ARS—Agricultural Research Service
commodity—a product of agriculture or mining
CSREES—Cooperative State Research, Education and Extension Service
ERS—Economic Research Service
NASS—National Agricultural Statistics Service
natural resources—materials and capacities supplied by nature
livestock—animals raised for use and profit
product—something produced
profitability—the ability to produce an excess of returns over expenditures
research—careful study and investigation for the purpose of discovering and explaining new knowledge
sustain—to give support or relief to
USDA—United States Department of Agriculture

Source: Agricultural Research Service, US Department of Agriculture, http://www.ars.usda. gov/main/main.htm

Language Arts

1. Students will read background independently.
   —Lead class discussion based on background and vocabulary.
2. Students will use an online search engine or other resources to find the website for the US Department of Agriculture's Agricultural Research Service.
   —Each student will select one agricultural research project from one of the three areas listed in the background.
   —Each student will write a thesis statement, with supporting details, about the project selected.
   —Each student will create a one-page flyer, including an image, for the ARS project he/she has researched.
3. Write the three ARS program areas on the chalkboard, an overhead projector or chart paper.
   —List projects students have researched under correct headings.
   —Discuss projects and how they affect our daily lives.
4. Students will work individually or in pairs to gather information to complete one of the presentations listed in the "Presentation Prompts" page included with this lesson. More than one group may select the same presentation topic.
   —Presentations should be concise and follow the prompt.
   —Students must use correct grammar and good speaking skills.
   —Students should use their creativity to sell their presentations.
   —Preparation of costumes, visuals, and props is a must.

Extra Reading

Fandel, Jennifer, *Louis Pasteur and Pasteurization*, Capstone, 2007.
Gilpin, Daniel, *Food and Clothing (History of Invention Set)*, Facts on File, 2004.
Hawkes, Nigel, *Genetically Modified Food*, Copper Beech, 2000.
Jones, Carol, *Cheese (From Farm to You)*, Chelsea, 2002.
Nelson, Marilyn, *Carver: A Life in Poems*, HB, 2001.
Reilly, Kathleen, and Samuel Carbaugh, *Food: 25 Amazing Projects: Investigate the History and Science of What We Eat (Build It Yourself Series)*, Nomad, 2010.

Presentation Prompts

1. Each year dozens of improved products and new varieties of fruits, nuts, and vegetables emerge from the laboratories and greenhouses of USDA's Agricultural Research Service and make their way into the marketplace. Write a commercial to sell one of these products.

2. CNN has just asked you for an interview on how agricultural research contributes to everyday products. Take it away.

3. If you were an ARS research scientist, what types of food or nonfood products would you like to develop? Convince the USDA to give you grant money for this project.

4. On the radio: Pretend your local radio station is interviewing you about your soybean research. Tell how soybeans contribute to daily life.

5. You have been selected to plan a classroom program on grains at your local elementary school. Suggest/discuss/demonstrate a hands-on activity you could feature.

6. Some of the most successful research is sponsored through multidisciplinary partnerships. (Example: horticulturists and nutritionists working together with the food industry.) As an ARS scientist, explain how you could develop a type of healthy product through a partnership.

7. Be creative. Design your own presentation using information from the USDA and/or Agricultural Research Service.

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.