Agriculture—From the Ground and All Around

Objective
Students will learn that agriculture is all around us in Oklahoma, from the ground and all around. Students will identify people in the community with careers associated with agriculture. Students will research some government agencies that support agriculture. Students will design posters to illustrate the theme “Agriculture: From the Ground and All Around.”

Background
From the ground and all around, Oklahoma agriculture feeds and clothes us and so much more. Our healthy soils produce wheat, soybeans, peanuts, cotton, watermelon, peaches, sweet potatoes and many more fruits and vegetables. Barley, canola, corn, oats, sorghum and hay feed our cattle, hogs, chickens, goats and other livestock. From our forests we get trees for lumber, paper and other products. Pecan groves provide nuts, a delicious source of protein.

Oklahoma soil is deep and rich in organic matter built up over thousands of years beneath tallgrass prairie. Tallgrass prairie soils make great farmland because they keep their fertility and have good structure. The short-grass prairie in the western part of the state provides good grazing for beef cattle.

In many parts of the state, water for irrigating crops comes from the ground when rainfall is scarce. The water is pumped from aquifers—underground layers of rock, gravel or sand that hold water filtered in the ground from rainfall and other sources.

Oklahoma agriculture is not just in the ground. It is all around us. You see it in the fields and pastures but also in the grain elevators and silos where wheat and other grains are stored, in the stores where our food is sold and in the research facilities where scientists work to improve crops and livestock.

Look around and think of all the people in your community with agricultural connections. The people who work in your local feed store support agriculture by providing feed for cattle and seeds for planting crops. The fruit and vegetable growers who bring produce to the farmers market are a part of agriculture. The bankers who loan money to farmers for machinery, seeds and other supplies are an important part of agriculture. The businesses where farm equipment is sold and the mechanics who keep the equipment running are part of agriculture. Trucks on the highway haul agricultural products to warehouses and stores.

Oklahoma Academic Standards

GRADE 3
Social Studies PALS—1.A.1,2, B.4,5,C.8; 2.A.2,B.6,7,8,10; 3.A.1,2,3,B.4
Social Studies Content—1.2; 2.3; 3.1B,2C
Visual Arts—1.1,2
English Language Arts—3.RI.1,2, 4,7,8,10; 3.W.2,4,5,6,7,8,10; 3.SL.1,2,3,4

GRADE 4
Social Studies PALS—1.A.1,2, B.4,5,C.8; 2.A.2,B.6,7,8,10; 3.A.1,2,3,B.4
Social Studies Content—1.2E,3,4,5
Visual Arts—1.1,2
English Language Arts—4.RI.1,2, 4,7,8,10; 4.W.2,4,5,6,7,8,10; 4.SL.1,2,3,4

GRADE 5
English Language Arts—5.RI.1,2, 4,7,9,10; 5.W.2,4,5,6,7,8,9,10; 4.SL.1,2,3,4

www.agclassroom.org/ok
Our government is part of agriculture. Tax dollars pay inspectors to keep our food safe, and scientists in our universities conduct important agricultural research. Teachers are part of agriculture, too, helping prepare students like you for future careers in agriculture.

From the ground and all around, agriculture feeds and clothes us, provides jobs to support families in our communities and keeps our state’s economy strong.

Social Studies/English Language Arts
1. Read and discuss background and vocabulary.
   — Ask students if they know anyone involved in the jobs listed or any others related to agriculture.
   — Students will explain the theme “Agriculture—From the Ground and All Around.” What are the key details in the background that support the theme?
2. Provide copies of the agriculture-related careers worksheet. Students will use the link to ag careers on the OAITC website to research the careers and match them with the duties listed on the worksheet. Please note the duties listed on the worksheet are only a sampling of the duties performed by people working in the jobs listed.
3. Agriculture is all around no matter where you go in our state. Provide copies of the Oklahoma Agricultural Commodities Map, available here: http://www.clover.okstate.edu/fourh/aitc/lessons/extras/2015%20Commodity%20Map.pdf
   — Students will locate your county and use the map symbols to identify the top agricultural commodities grown in your county.
4. Students will each conduct research and write short research papers on one of the following topics:
   • Oklahoma aquifers and irrigation of croplands.
   • Prairie soils (Compare with other types of soil.)
   • McClellan-Kerr Navigations system
5. Students will each use online resources to research one of the following state agencies and list services they provide related to agriculture and how those services benefit individuals:
   • Oklahoma Department of Agriculture, Food and Forestry
   • Oklahoma Cooperative Extension Service
   • Oklahoma Conservation Commission
6. Invite one or more persons in your community to your class who work in one of the agriculture-related jobs mentioned in the background.
   — Students will prepare questions ahead of time.
   — Students will write short reports about the visit.

Visual Art
1. Students will draw pictures to illustrate the theme “Agriculture—From the Ground and All Around,” based on the background.
2. Students will design posters to illustrate the theme, “Agriculture—From the Ground and All Around.”

Additional Resource

www.agclassroom.org/ok
Vocabulary

agriculture—the science, art, and business of cultivating soil, producing crops, and raising livestock; farming
aquifer—a water-bearing layer of rock, sand, or gravel capable of absorbing water
banker—a person in the business of lending, exchanging, taking care of, or issuing money
career—a profession followed as a permanent occupation
cattle—domestic four-footed animals held as property or raised for use, especially bovine animals (as cows, bulls, or steers) kept on a farm or ranch
crop—a plant or animal or plant or animal product that can be grown and harvested
fertility—producing vegetation or crops plentifully
field—an area of cleared land used especially for planting crops
future—coming after the present
grain elevator—a building for elevating, storing, unloading, and sometimes grinding grain
haul—to transport in a vehicle
irrigate—to supply with water by artificial means
livestock—animals kept or raised; especially farm animals kept for use and profit
lumber—timber or logs especially when sawed and trimmed for use
organic—of, relating to, or obtained from living things
pasture—plants (as grass) for feeding especially grazing animals
prairie—a large area of level or rolling grassland
product—something produced by human or mechanical effort or by a natural process
protein—any of numerous substances that consist of chains of amino acids, contain the elements carbon, hydrogen, nitrogen, oxygen, and often sulfur, include many compounds essential for life, and are supplied by various foods (as meat, milk, eggs, nuts, and beans)
research—close and careful study
silo—a trench, pit, or especially a tall cylinder (as of wood or concrete) used for making and storing silage
soil—the loose surface material of the earth in which plants grow
structure—the arrangement or relationship of elements (as particles, parts, or organs) in a substance, body, or system
warehouse—a building for the storage of goods
The people involved in the jobs listed below are all around you. Research the jobs and match them with the descriptions of a few of the duties performed by people in that job. Write a sentence explaining how people in these jobs benefit you or your family. Do you know anyone personally who works in one of these jobs?

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
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<tbody>
<tr>
<td>food inspector</td>
<td>Help landowners manage the use of their land. Study the effects of land use and develop new practices to sustain or restore the land.</td>
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<tr>
<td>soil conservationist</td>
<td>Feed and check cattle and calves, tag and vaccinate calves, repair and maintain equipment, brand cattle, move cattle from pasture to pasture.</td>
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<tr>
<td>farm equipment mechanic</td>
<td>Teach high school classes in production agriculture, agricultural mechanics, horticulture, forestry and other agriculture subjects.</td>
</tr>
<tr>
<td>butcher</td>
<td>Appraise farm property, check farm credit, arrange for farm loans, answer customer questions, help farmers budget their incomes so they can repay loans.</td>
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<td>agriculture teacher</td>
<td>Inspect food at food-processing facilities, check food shipments before they leave or enter the country at ports and border crossings.</td>
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<tr>
<td>truck driver</td>
<td>Gather, write and edit news of interest to farmers and others in farm communities and photographs events like fairs and livestock shows.</td>
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<td>crop farmer</td>
<td>Maintain, repair and overhaul farm machinery and equipment, prepares new machinery and equipment for delivery.</td>
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<td>Cut, trim, bone, tie, slice or grind meat for consumption.</td>
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<td>Use knowledge of soils and plants to determine fertilizer and irrigation needs, prepare the soil for planting, harvest crops and sell them.</td>
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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.
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- **farm loan officer**: Cut, trim, bone, tie, slice or grind meat for consumption.

- **agricultural news reporter**: Haul freight from one location to another. Operate and perform general maintenance on trucks, deliver and pick up shipments.

- **ranch hand**: Use knowledge of soils and plants to determine fertilizer and irrigation needs, prepare the soil for planting, harvest crops and sell them.

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