Agriculture—
The Heartbeat of Oklahoma

Objective
Students will read about the importance of agriculture in Oklahoma and explore metaphors to describe it. Students will write essays based on the theme “Agriculture—The Heartbeat of Oklahoma.”

Background
As you ride along Oklahoma roads it's hard to miss the importance of agriculture in our state. Look to your right and you see cattle or sheep grazing in a field. Look to your left and you see waving wheat, green fields of soybean or the beautiful yellow flowers of canola. Later in the season you will see white fields of cotton. In the distance you see the tall grain elevators that store the grain waiting to be sold. On the road, you may pass a silver milk truck or a truck packed with giant cylinders of hay or a slatted cattle truck full of cattle on the way to market.

Agriculture is the heartbeat of Oklahoma. Just as your beating heart keeps you alive by pumping blood through your body, agriculture pumps life through our state by providing the food and other materials we need to survive, jobs to keep the economy healthy and even seasonal celebrations that make Oklahoma a fascinating place to live.

Like the beating heart in your body’s circulation system, agriculture circulates food and other products through our food system. Most farmers and ranchers sell to collection points—grain or produce terminals or stockyards. The terminal or stockyard sells to processing companies, which process and package the products we buy in the grocery store. Finished food products are moved by truck or rail to warehouses. Warehouses assemble full truckloads of products for shipment to one large retailer or to many smaller outlets.

And all along the way, agriculture pumps jobs into Oklahoma communities and helps keep our economy moving. According to a 2008 study* at Oklahoma State University, agriculture was responsible for 8.8 percent of total employment in our state, with 188,294 jobs. Agriculture also helps support other segments of the economy—manufacturing, energy and wholesale and retail trade. Farmers and ranchers buy seed, fertilizer, equipment, fencing and more. When they sell their commodities, they generate income and then turn around and spend that income on things like cars, furniture and clothing. Without agriculture the study estimated our economy would lose 1 in 12 employees.

Oklahoma agriculture keeps our hearts beating with a reliable and heart-healthy food supply. Farmers markets offer Oklahoma-grown fruits and vegetables with nutrients important for heart health. Wheat farmers grow healthy whole grains. Animal agriculture provides healthy sources of protein—beef and dairy products, pork, lamb, chicken and eggs. Pecan and

Oklahoma Academic Standards
GRADE 7
COMMON CORE
English Language Arts—7.RI.1,2,4,5,8,10;
7.W.7.1.ABC,2ABC,4,5,6,10;
7.L.5A
Math Practice—7.
MP.1,2,4,5,6,7
Math Content—7.
RP.3; 7.NS.A.2.D, 3;
7.EE.A.2.B.3,4A

GRADE 8
COMMON CORE
English Language Arts—8.RI.1,2,4,5,8,10;
8.W.7.1.ABC,2ABC,4,5,6,10;
8.L.5A

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peanut producers provide other sources of heart-healthy protein.

With the regularity of a heartbeat, Oklahoma agriculture inspires celebrations of the seasons. In spring we celebrate new life. On the farm the fields start to turn green, and there are baby animals everywhere. Farmers plant most of their crops in spring. The summer sun makes everything grow. It is the busiest time on the farm. Mid-summer celebrations provide rest from summer chores and relief from the heat. Fall celebrations began as harvest festivals. In winter work on the farm slows down. It is time for planning for the following growing season. Winter celebrations remind us that the dark, cold days will not last forever, and that the cycle will soon bring spring.

Agriculture truly is the “Heartbeat of Oklahoma.” Without it, how would we survive?


English Language Arts
1. Read and discuss the background and vocabulary.
   — Students will find two or more central ideas in the background text and analyze their development. Students will provide an objective summary of the text.
   — Students will outline the passage and analyze the structure and organization. How does it contribute to the development of the theme?
   — Students will draw a diagram to illustrate the movement of agricultural commodities through the food system.

2. Discuss the theme “Agriculture: The Heartbeat of Oklahoma.”
   — Discuss the difference between literal and figurative language. Is agriculture literally the heartbeat of Oklahoma or figuratively? What kind of figurative language does the phrase represent? Discuss metaphor.
   — Students will brainstorm in groups to find other metaphors that describe the importance of agriculture to Oklahoma.

3. Agriculture is like a heartbeat because it circulates nourishment through our food system. Brainstorm some other ways agriculture is like Oklahoma’s heartbeat. What does a heartbeat do? How does it compare with agriculture?

4. Students will write essays based on the theme “Agriculture—The Heartbeat of Oklahoma.” Students will follow the steps for writing an essay provided with this lesson. Students will edit each others work. Discuss plagiarism. Students will take care to avoid plagiarism in their writing.

Math
1. Hand out copies of the chart included with this lesson “Agriculture’s Contribution to Employment in Oklahoma, 2008.”

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—Discuss the chart as a class, including discussion of the difference between direct contribution, indirect effect and induced contribution.
—Students will write equations to solve the ratio and percentage problems included with the chart and show their work

Extra Reading
Thompson, Gare, *What is Supply and Demand? (Economics in Action)*, Crabtree, 2009.
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How to Write an Essay

1. Brainstorm the topic to get ideas, both individually and with your teacher and classmates.

2. Put your ideas in order by outlining or diagramming on paper.

3. Write a thesis statement.

4. Write the body, including
   — Main points
   — Subpoints
   — Elaboration of the subpoints.

5. Write the introduction.

6. Write the conclusion.

7. DO NOT PLAGIARIZE! Review the definition of plagiarism. You can use someone else’s ideas to support your own ideas if you put them in your own words and give the person credit. Copying someone else’s work word for word without using quotation marks and giving him or her credit is plagiarism. DON’T DO IT.

8. Go back and read to check spelling and grammar and to add finishing touches.

9. Ask someone to read it for you to catch mistakes you missed and to make sure it makes sense.

10. Rewrite. The key to writing a good essay is to write and rewrite and rewrite again. Don’t be discouraged by suggestions from other readers and don’t be afraid to read the essay over and over again to make sure it sounds the way you want it to sound and says what you want it to say.

11. Ask someone else to read it for you to catch mistakes you missed and to make sure it makes sense.

12. Rewrite again.

Now get started. Here’s your topic:

Agriculture: The Heartbeat of Oklahoma
Agriculture’s Contribution to Employment in Oklahoma, 2008

The total contribution of agriculture to employment in Oklahoma in 2008 was 188,294 jobs. Of this amount, 138,124 jobs resulted directly from agriculture. In the chart below, the direct contributions to the number of jobs created by the agricultural industry are broken into three components:

- Production is defined as growing crops and raising livestock on the farm or ranch.
- Processing is defined as making products from the crops and livestock, e.g., breakfast cereal, canned vegetables, bacon, hamburger meat, etc.
- Ag-related services is defined as support activities for agriculture and forestry, including cotton ginning, soil preparation, crop harvesting, contract labor, pest control, breeding and insemination, etc.

The indirect effect is the estimated number of jobs resulting from the products farmers, ranchers and producers buy from other Oklahoma businesses to support agricultural activities. Indirect effects create an estimated 27,692 jobs in the state.

The induced effects are jobs created by products consumed by the households of persons involved in agriculture. The estimated total of jobs from induced effects is 22,478.

<table>
<thead>
<tr>
<th></th>
<th>Number of Jobs</th>
<th>% Total Contribution</th>
<th>% Total Oklahoma Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>97,056</td>
<td>51.5</td>
<td>4.6</td>
</tr>
<tr>
<td>Processing</td>
<td>33,757</td>
<td>17.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Ag Related Services</td>
<td>7,311</td>
<td>3.9</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Direct Contribution</strong></td>
<td><strong>138,124</strong></td>
<td><strong>73.4</strong></td>
<td><strong>6.5</strong></td>
</tr>
<tr>
<td>Indirect Effects</td>
<td>27,692</td>
<td>14.7</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Direct + Indirect</strong></td>
<td><strong>165,816</strong></td>
<td><strong>88.1</strong></td>
<td><strong>7.8</strong></td>
</tr>
<tr>
<td>Induced Effects</td>
<td>22,478</td>
<td>11.9</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total Contribution</strong></td>
<td><strong>188,294</strong></td>
<td><strong>100.0</strong></td>
<td><strong>8.8</strong></td>
</tr>
</tbody>
</table>


Write equations to solve the following ratio and percentage problems. Show your work.

1. What is the ratio of jobs from indirect effects to jobs from direct contribution? Write the ratio as a fraction and reduce to the lowest common denominators.

2. What is the ratio of jobs from direct contribution + indirect effect to total number of jobs. Write the ratio as a fraction and reduce to the lowest common denominator.

3. If agriculture was responsible for 8.8 percent of total employment in our state in 2008, with 188,294 jobs, what was the total number of jobs in the state in 2008.

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