



Teacher Guide

Middle School Edition, Issue 1
Culture and Society

About Iowa Ag Today

Iowa Ag Today is a great supplement to your curriculum. Each issue is chock-full of discussion topics, new vocabulary, and other materials that you can easily integrate into lessons. Major highlights of each issue include:

Issue 1: **Culture & Society**

- Economics
- Trade & global impact
- Agriculture through history
- Innovation in agriculture
- Careers

Issue 2: **Science**

- Science and technology
- Sustainable systems for a growing population
- Renewable & non-renewable energy sources
- Careers

Issue 3: **Food & Nutrition**

- Nutrition
- Food safety
- Food processing
- Careers

Extension Ideas

- Develop a list of agricultural business in your community. Assign students to learn more about the companies or interview people using the student sheet provided.
- Using the Question Formulation Technique™ (QFT), display the phrase “Iowa agriculture impacts the global economy” and have students generate questions about this topic. This process can be used to kick off a unit, prepare for a debate, or as starting point for additional research. An overview of the QFT is found at: <https://goo.gl/zj9gVb>
- Using evidence from the text and photographs on page 3, additional research and/or interviews with farmers, ask students to write an essay on how farming has changed over the last 100 years.
- Ask students to pick one of the countries that Iowa Exports to on page 6, and compare that country’s geography, natural resources, and climate to Iowa.
- Invite an agriculture lender from a local bank or someone from another agriculture business to speak to your class about how agriculture impacts the local, U.S. and global economy.

Why Agriculture?

Teaching about agriculture in Iowa is an ideal way for students to learn what their state is all about and provide real-life connections to science, math, and social studies concepts. Agriculture is a topic that students can easily connect to because they encounter it often. Who doesn’t enjoy talking about food? Nearly everything we eat, wear, use -- even the fuel that powers the cars and buses we ride in -- comes from plants and animals grown on farms. Agriculture provides perfect real-world connections and makes learning relevant to students.

Helping students understand the farm-to-table connection is important in our consumer-driven society. Teaching students to be agriculturally literate connects their learning to everyday life. That is what the *Iowa Ag Today* series is all about.

Alignment with Standards and Lexile

Code	Standard Lexile Measure = 910L
	Iowa Core Social Studies Standard
SS.6.18	Explain how changes in transportation, communication, and technology influence the movement of people, goods, and ideas in various countries.
SS.6.23	Compare Iowa’s geography, natural resources and climate to other regions of the world.
SS.7.18	Explain and evaluate how economic decisions affect the wellbeing of individuals, businesses, and society.
SS.7.22	Explain how the relationship between the environmental characteristics of places and production of goods influences the spatial patterns of world trade.
SS.7.27	Analyze the role that Iowa plays in contemporary global issues.
SS.8.15	Evaluate how economic decisions affect the wellbeing of individuals, businesses, and society.
SS.8.16.	Analyze the role of innovation and entrepreneurship in institutions throughout early American history in a market economy.
Additional Social Studies Standards	SS.6.17, SS.6.19, SS.6.20, SS.6.21, SS.6.22, SS.7.16, SS.7.19, SS.7.20, SS.7.21, SS.7.23, SS.7.24, SS.7.25, SS.8.18, SS.8.17, SS.8.20, SS.8.23

Glossary

Some words in *Ag Today* may be unfamiliar to your students. These words often appear in bold type. Many are defined in the articles. Words you might wish to review with your students after reading the magazine are:

agriculture (pg. 1); **processed, foodborne illness, pasteurized, butterfat, homogenized, fortified, inoculated, brined,** (pg. 2); **overseas markets, recession, Great Depression, drones, climate controlled systems** (pg. 3); senator, regulations, **journalist, innovation, implements, planter, loan** (pgs. 4-5); **export, import, subsistence farming, trade agreement** (pg. 6); **family-owned, diversify risk, labor intensive, cooperative, crop scouting, grain elevators, packing plants, vertical integration** (pg. 7); **cereal grains, slaughterhouse, typhoon, lineage, commodity, stewardship, cover crops, no-till farming** (pg. 8).

Discussion Prompters

Cover (Ag is Everywhere)

1. Make a list of things that you've needed today that come from agriculture.
 - Food: toast, cereal, milk, juice, bacon, sausage, etc.
 - Fiber: cotton towels, woolen mittens, cotton blue jeans and other clothes, leather shoes, wood dressers, floors, etc.
 - Fuel: ethanol and biodiesel for cars and busses
 - Other non-food products: soy ink on newspaper, laundry detergent (uses corn by-products), paint brushes (pig hair), glue (cattle by-product), etc.

Student Page 2 (Process This)

1. Think about different foods you like to eat and brainstorm the processes they went through. *(For example: Bread. Wheat is harvested, sorted, cleaned, and checked for protein content. Wheat is ground or milled until very fine. Hulls are removed. Vitamins and/or other fortifications are added. Wheat is mixed with water, salt, yeast, and maybe a couple of other ingredients. Bread dough rises and then it is baked. Bread is sliced and then bagged. Bread is then packaged and shipped to the grocer.)*

Student Page 3 (Then and Now)

1. What advances in technology have allowed farmers to grow more? *(GMOs, GPS, better genetics, better planting and harvesting equipment, gas and electric powered machines instead of human and animal powered, etc.)*
2. How did this affect jobs and where people live? *(In the 1800s more than 50% of the U.S. population lived on farms. Today, less than 2% of the U.S. population live on farms. Because farming is more mechanized it takes fewer people.)*

Student Pages 4 and 5 (Careers)

1. There are more than 300 different career fields in agriculture. What others are you familiar with? *(Visit <https://www.agexplorer.com/> to explore more.)*

Student Page 6 (Trade)

1. What are Iowa's top exports? Why? *(Iowa is the number one producer of corn in the U.S. Iowa is home to several tractor manufacturers including John Deere, Kinze, and Vermeer. Iowa is the number one producer of pork in the U.S. Iowa is home to herbicide manufacturers like Omnium, Valent, and Albaugh.)*
2. What countries does Iowa export the most to? Why? *(Canada is the U.S.'s #1 trading partner. Mexico is the U.S.'s #2 trading partner. Japan and China buy a lot of corn and soybeans.)*

Student Page 7 (Family farm)

1. What is a family farm? *(Family farms are defined as those run by a head of household and their immediate family including spouse, siblings, and children. 97% of farms in the U.S. are family owned and operated even if they may be incorporated to help diversify financial risks.)*

Student Page 8 (School Lunch Tray)

1. How do farmers care for soil and water and return value to the land? *(Farmers can implement conservation strategies like manure management, no-till, cover crops, bioreactors, rotational grazing, terraces, tile lines, buffer zones, etc. to help protect water and to improve plant communities and soil health.)*
2. Why is it important for Iowa to have good relationships with other states and countries? *(Iowa trades with other states and countries. It is important to have trade agreements and for those partners to know the quality of Iowa produced products. Trading partners need to trust who is producing the goods they are buying.)*

Show what you know - Key

1. Agriculture is everything involved in raising crops and livestock to be used for other purposes. It's important, because everyone needs food, clothing, shelter, and fuel; all things that come from agriculture.
2. Corn, soybeans, pork, and eggs
3. More technology, more land per farm, less farms total, less labor required, increased efficiency, increased safety
4. Processed foods are altered to benefit taste, shelf life, or increase digestibility.
5. Corn, tractors, and fresh pork. Canada, Mexico, and Japan.
6. Entrepreneur, agriculture journalist, sales, commercial lender, veterinarian, geneticist, politician, etc.
7. Cooperatives are companies that benefit groups of farmers by having services available, helping to ensure fair prices, and by also having some materials available for sale.

Name: _____

Circle one: **Pretest** **Post-test**

Show what you know!

Take this short quiz before you read Ag Today, then again after reading the magazine.

1. What is agriculture? Why is it an essential part of our society and culture?
2. What are the top agricultural products produced in Iowa?
3. Explain how farming has changed in the last 100 years.
4. What are processed foods? Name three reasons why foods are processed.
5. What are the top three exported products in Iowa? What are the top three countries Iowa exports to?
6. One in five jobs in Iowa are in agriculture. Name and describe at least two agriculture careers other than a farmer.
7. Describe what the term "cooperative" means in agriculture?



Name: _____

Interview with a Professional

Find someone who works in the agriculture industry. Interview them using the questions below.

Name: _____ Company: _____

Job Title: _____

1. What products or services does your company provide?
2. What impact does your company have in the local community and worldwide?
3. What is the main goal of your position? How do you accomplish that goal?
4. What education and training did you need for your career? What subjects in school prepared you most for your job?
5. What do you like most about your position?

Write a summary of your interview that includes the following:

- *A description of the company & the role of the person interviewed.*
- *What did you find interesting about this career?*
- *Do you think this career would be a good option for you? Why or why not?*