



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

- Assign students to interview someone from a local supermarket, restaurant, or other food-related business to learn about their food safety programs and career opportunities in their fields.
- Have students work in teams to create a new food product. Tasks should involve market analysis, economics, food chemistry and safety, graphic design, and communication.
- Invite a farmer to your classroom to discuss how their farming practices are affected by consumer preference, food safety, etc.
- Have students research colleges that offer food science programs and summarize the different pathways of study and job opportunities.
- Use the student page to have students develop a breakfast menu that is well-balanced, affordable, and appealing.
- Have students research modern food processing and preservation techniques such as canning, freezing, dehydrating, and pasteurization and compare and contrast them to historic techniques.

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, social studies, food and nutrition 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 = 920L
	National Family and Consumer Sciences Standards
8.1.1	Explain the roles, duties, and functions of individuals engaged in food production and services careers.
9.2.6	Demonstrate standard procedures for receiving, storage, and preparation of raw and prepared foods.
9.3.2	Analyze nutritional data.
14.1.3	Investigate the governmental, economic and technological influences on food choices and practices.
14.1.4	Analyze the global, regional, and local events and conditions on food choices and practices.
14.2.1	Evaluate the effect of nutrition on health, wellness, and performance.
14.2.4	Analyze sources of food and nutrition information, including food labels, related to health and wellness.
14.4.3	Analyze how changes in national and international food production and distribution systems influence the food supply, including sustainability, organic food production and the impact of genetically modified foods.
14.5.1	Investigate how scientific and technical advances influence the nutritional content, availability and safety of foods.

Glossary

Some words in *Iowa 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, domestically, U.S. Department of Agriculture, oxtail (pg. 1); **processed food, processing, pasteurization, lactose** (pg. 2); **cross contamination, danger zone** (page 3); **conventional, all natural, hormone-free, antibiotic-free, pasture raised, cage-free, pecking order, free-range, certified organic** (pg. 6); **Food and Drug Administration, Nutrition Facts label, percent Daily Value** (pg. 7)

What do they mean? (for example: *gluten free – gluten is protein found in wheat that 1% of people have an allergy to called Celiac disease; grass-fed – means that the cow was not finished with a grain enriched diet before harvest.*)

Student Page 7 (Nutrition Labels)

1. Is the burrito a healthy option? (*The burrito has a good balance of protein from the meat and beans as well as other nutrients from the rice and vegetables. It has a high amount of dietary fiber and is relatively low in calories.*)
2. Is it a better choice as a snack or for a meal? (*At only 300 calories, the burrito is potentially a better snack. It is recommended that women eat around 2,000 calories per day and men eat around 2,500 calories per day. If you eat three meals a day, one meal can be between 600-700 calories. If the burrito is a snack the next meal should be a smaller one. If the burrito is a meal, it could be paired with something else like a salad.*)

Student Page 8 (Choices)

1. What other choices do crop and livestock farmers make?
 - *(whether or not to apply fertilizer to help crops grow*
 - *whether or not to apply insecticides to crops to kill damaging insects*
 - *whether or not to apply fungicides to crops to kill damaging fungi*
 - *whether or not to apply herbicides to crops to kill weeds*
 - *whether or not to treat animals with a vaccine to prevent illness*
 - *whether or not to treat sick animals with antibiotics*
 - *how much to feed animals*
 - *what kind of feed mix is best for animals, etc.)*
2. What local, state, or federal policies impact food security, food integrity, or food nutrition?
 - *(Example: Food Safety Modernization Act - FSMA*
 - *USDA Food Safety and Inspection Service)*
3. How do you think lawmakers decide on those policies? (*To see the complete process and timeline of the FSMA, visit <https://www.fda.gov/food/food-safety-modernization-act-fsma/whats-new-fsma>*)

Show What You Know - Key

1. The industry provides food, clothing, shelter, and fuel from plants and livestock.
2. 165°F
3. Cross contamination is the spread of bacteria from one item to another. It can be prevented by cleaning cooking utensils and surfaces, keeping raw food separated from cooked food, and not washing raw meat.
4. Foods that are physically or chemically altered to improve the taste, convenience, shelf-life, or nutrition of a product.
5. Farmer, food scientist, food buyer, food safety specialist, etc.
6. Meeting the needs of the present without compromising the needs of the future. Sustainable practices must consider environmental, economic, and social needs.
7. Food scientists ensure the stability, safety, and appeal of a product.

Discussion Prompters

Cover (Food and Nutrition)

1. Pick a country. What foods or dishes are unique to the culture of that country? (*For example: kimchi in Korea, pho in Vietnam, biltong in South Africa, and lefse in Norway*)
2. What role(s) does the U.S. Department of Agriculture play in the food system? (*The USDA helps ensure the nation's supply of meat, poultry, eggs, grains, fruits, and vegetables. They ensure the health and safety of animals and the health and safety of food products to consumers. They help preserve natural resources through conservation and watershed improvement.*)

Student Page 2 (To Process or Not to Process)

1. What processed foods look very different from the whole food? (*mayonnaise is made from soybeans and eggs, ketchup is made from tomatoes, mustard is ground mustard seed mixed with vinegar, bread is made from ground wheat*)
2. How could processing affect the nutritional content? (*mayonnaise is pasteurized so the eggs will not carry disease; white bread can lose the nutritional value when the bran is removed, but white bread is often fortified with vitamins; milk often has vitamin D added to it; many processed foods have added fats or sugars which decreases nutritional value*)

Student Page 3 (Safe Food)

1. Added ingredients like salt can make some foods last longer. What ingredients might affect food's quality over time? (*artificial coloring, sweeteners like aspartame, additives like potassium bromate or monosodium glutamate, preservatives like sodium benzoate or sodium nitrite, trans fat, or extracts like yeast or rice extract.*)

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 (Buzzwords)

1. What determines the color of eggs? (*Egg shell color is determined by the breed of the hen and does not change the quality, taste, or nutrition of the egg. Eggs with white shells come from white hens. Eggs with brown shells come from brown hens. Chickens may even lay eggs with blue or olive-green shells.*)
2. What other buzzwords are on product packages?

Name: _____

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

Show What You Know

Take this short quiz before and after you read Iowa Ag Today. See the improvement!

1. What is agriculture?
2. What is the minimum internal temperature that chicken or turkey should be cooked to?
3. What is cross contamination? How can it be prevented when cooking?
4. What are processed foods? Name three reasons why foods are processed.
5. Name three careers related to the production, processing, and marketing of food.
6. Define sustainability.
7. Why is the job of a food scientist important?

