

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 to STEM 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.

About Iowa Ag Today

Iowa Ag Today is a great supplement to your science, social studies, and language arts 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: Agriculture is Everywhere

- What is agriculture?
- Iowa agriculture crops, livestock, & products
- Agricultural careers

Issue 2: Food, Health & Lifestyle

- Nutrition
- Food safety

Issue 3: Agriculture and the Environment

- Natural resource management
- Agriculture in global ecosystems

Issue 4: Culture, Society, Economy & Geography

- Agriculture and the development of civilizations
- Iowa's agriculture innovators
- Geography, global trade and economics

Issue 5: Science, Technology, Engineering & Math

- Science and technology to increase food production
- Safe, healthy, abundant food
- Sustainable systems for a growing population

Issue 6: Plants & Animals for Food, Fiber & Energy

- Domestication of plants and animals
- Renewable and non-renewable resources
- Plant and animal needs
- Biotechnology

Integration Ideas

- Construct a menu showing the foods and amounts eaten in a day, month, and year. (p. 2, 3, 6)
- Pose the problem: Pat doesn't have a whole hour to exercise in one time block. What advice would you give Pat? Then have students design a new game or exercise for Pat. (p.7)
- Identify the STEM involved in producing pork. (p. 4 & 5)
- Discuss how pork production in Iowa impacts local and global economies. (p. 4 & 5).
- Research the market price of pork vs. the price of pork in the grocery store over time. Discuss why both prices rise or fall. (p.5)
- Compare nutrition labels of three foods and explain which would be the best choice for them. (p.6)
- Explore national foods from around the world and why those foods are most prominent. (p. 8)
- Ask students to make "thinking tracks" (annotate) in the margins as they read *Ag Today*. Then discuss their thinking tracks in small groups.
- Use the links on the virtual version of *Iowa Ag Today* at www.iowaagliteracy.org to extend learning.

Please leave this resource a review by scanning the QR code or going to:
<https://form.jotform.com/220410731565144>



Alignment with Standards and Lexile

Subject	Code	Lexile Measure = 820L
		Essential Concept and Skill
Science	3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem
Social Studies	SS.4.14.	Explain the reasons why the costs of goods and services rise and fall.
Social Studies	SS.4.17.	Create a geographic representation to illustrate how the natural resources in an area affect the decisions people make.
Social Studies	SS.4.18	Describe how environmental and cultural characteristics influence population distribution in specific places or regions.
21 st Century	21.3-5.HL.1	Obtain, interpret, understand, and use basic health concepts to enhance personal, family, and community health
21 st Century	21.3-5.HL.2	Utilize interactive literacy and social skills to establish personal family, and community health goals.
21 st Century	21.3-5.HL.3	Demonstrate critical literacy/thinking skills related to personal family, and community wellness.
21 st Century	21.3-5.HL.4	Recognize that media and other influences affect personal, family, and community health.
21 st Century	21.3-5.HL.5	Demonstrate behaviors that foster healthy, active lifestyles for individuals and the benefit of society.

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: **processed food** (pg. 1), **serving**, **foodborne illness**, **cross-contamination** (pg. 2), **carbohydrates**, **protein**, **fats**, **vitamins**, **minerals** (pg. 3), **animal nutritionist**, **butcher**, **meat inspector** (pgs. 4-5), **allergens** (pg. 6), **okra**, **culture**, **sushi**, and **Mediterranean diet** (pg. 8).

Discussion Prompters

Cover (Eat a Rainbow of Foods to Stay Healthy)

1. How have you processed foods to eat? (*washing, cooking, microwaving, cutting, etc.*)
2. Why would you want to we eat a lot of different kinds of foods? (*Different kinds of foods provide different nutrients for our body. For example, dairy is a good source of calcium and fruits are a good source of vitamins.*)

Student Page 2 (Serving Size and Keep Food Safe)

1. Serving sizes are recommended. Why do you think they are recommended and not rules? (*Answers will vary.*)
2. How can you prepare food so it is safe to eat? (*Wash your hands, wash preparation surfaces, cook to recommended temperature, use clean utensils.*)
3. Look at the item comparisons for serving size. If you were to change these items, what would the be? (*Answers will vary*)
4. What careers in food preparation and food service would you be interested in? (*Chef, food scientist, baker, butcher, waiter, hostess, dishwasher, sous chef.*)

Student Page 3 (Nutrition)

1. What are the five essential nutrients that the body needs? (*carbohydrates, protein, fats, vitamins, and minerals*)
2. Describe what different nutrients do for your body. (*carbs give us energy, protein builds tissue, fats help us absorb vitamins, vitamins help your body function, and minerals help with things like keeping bones strong*)
3. What other careers are available in food nutrition? (*food chemist, meat scientist, nurse, health educator, food sales representative.*)

Student Pages 4 and 5 (Pork: From the farm to you)

1. Many pigs are raised in the same states that raise a lot of corn and soybeans. Why do you think that is? (*Two primary components of a pig's diet are corn that provides carbohydrates and soybeans that provide protein. Less transportation of the feed means more efficient production.*)
2. Why are pigs raised indoors? (*Raising pigs in barns protects them from weather and predators, sunburn, hypothermia.*)
3. What nutrients does meat provide in a healthy diet? (*meat is rich in protein and also provides many minerals for a healthy diet*)
4. Describe the process or journey meat takes to get from the farm to your plate? (*Animals are raised on a farm. When they are big enough, they are transported by truck to processing plants. At the processing plant they*

are cut and packaged.)

5. How do you contribute to the cost of food? (*The cost of food changes based on the market. Buyers influence the market and the farmer through a trickle-down effect. If buyers stop purchasing certain cuts or types of meat, the farmer is also affected.*)
6. How does the media and advertising impact what you want to purchase at the store? (*Answers will vary*)

Student Page 6 (My Plate and Yours)

1. How could you eat a rainbow of foods and meet the MyPlate suggestions?
2. What does this label tell us? (*Serving size is 2 oz., calories per serving is 200, 7g of protein, 6.5g fat, 41g of carbs, etc.*)
3. What allergens have you seen on food labels? (*Dairy, eggs, fish, gluten, peanuts, tree nuts, wheat, etc.*)

Student Page 7 (Healthy Movement)

1. What are three things you can do to have an active lifestyle? (*Exercise during TV commercials, play tennis, swim, do chores, plant a garden, etc.*)
2. How would you help to encourage someone to exercise with you? (*Make it a game, make them feel included, ask them, etc.*)
3. 1 hour can seem like a long time. What are ways that you could break up your healthy movement? (*Use a timer, switch activities, break the time into shorter segments, etc.*)

Student Page 8 (What the world eats)

1. Why do you think some cultures eat insects? (*They are high in protein and fat, they take less space to raise, the climates are more appropriate for them, etc.*)
2. What causes people around the world to eat different foods? (*They eat what is available to them locally and what can be grown in their climate, etc.*)
3. How does the U.S. diet compare to the rest of the world? (*Americans eat a lot more total calories and more of those calories come from meat, fat, sugar, and dairy. People in the U.S. also eat more processed foods.*)
4. How do you think other cultures influence what you eat, or the foods we can find in Iowa? (*Many foods are traded across the world which changes the foods you can find in the store, and when these foods are available. People move and migrate to new places. This brings new foods, ideas, and more.*)

Show what you know - Key

1. They give us energy and keep our essential body functions working correctly
2. True – they are rich in protein and fat
3. Weather and predators
4. B. 145 degrees Fahrenheit
5. C. Iowa
6. D. All of these
7. $2,870 \div 2 = 1,435$
8. Vitamin C comes from oranges, calcium comes from milk, iron comes from red meat and dark green vegetables.

Name: _____

Check one:

Pretest

Post-test

Show what you know!

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

1.

Explain why eating a variety of foods is an important part of a healthy diet.

2.

Insects are eaten in some cultures as food. Circle one: True False

Explain why you think this.

3.

Most pigs in Iowa are raised in barns. This protects them from

_____ and _____.

4.

What internal temperature should pork be cooked to kill potential bacteria?

a. 100 degrees Fahrenheit

b. 145 degrees Fahrenheit

c. 165 degrees Fahrenheit

5.

Which of the following states is the top pork producing state?

a. Illinois

b. Florida

c. Iowa

6.

Many people work with pigs in their career. Which of the following people work with pigs?

a. Veterinarian b. Pork Buyer c. Farm Manager d. All of these

7.

Some people get half of their calories from grain! If you ate 2,870 calories each day, how many calories would come from grains like bread and rice? Show your thinking process.

8.

Describe one vitamin or mineral people need in their diet and where it can come from.

Name: _____



What do you eat?

Record everything you eat for one day. Be sure to include breakfast, lunch, dinner and all snacks. Then, calculate how many servings of fruits, vegetables, protein, grains and dairy using the key below.

- 1 serving of **fruit** = 1/2 cup fruit or 1 whole apple, banana, or orange;
- 1 serving of **vegetables** = 1/2 cup cooked vegetables or 1 cup raw leafy greens
- 1 serving of **protein** = 1 tablespoon peanut butter, 1 egg, or 2-3 ounces meat
- 1 serving of **grains** = 1 slice bread, waffle or pancake, 1/2 cup cooked rice or pasta, or 1 cup cereal
- 1 serving of **dairy** = 1 cup milk or yogurt or 1 ounce cheese

Create a bar graph of what you ate by coloring one box for every serving of food you ate in the grid below.

Servings	8					
	7					
	6					
	5					
	4					
	3					
	2					
	1					
		Fruits	Vegetables	Protein	Grains	Dairy

How does your graph compare to the USDA's MyPlate recommendations?

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