

Started in 1985, the Minnesota Agriculture in the Classroom program (MAITC), is a unique public/private partnership between the Minnesota Department of Agriculture and the MAITC Foundation. The program goal is to advance agricultural literacy to all learners, especially K-12 students and educators. MAITC’s mission is “to promote understanding and awareness of the importance of agriculture.”

We are pleased to offer the free AgMag series for kindergarten, first, and second grades (AgMag K, AgMag 1, and AgMag 2). Each issue is written and targeted to each specific grade level from K-2 (for 4th-6th grade students, MAITC offers a separate publication called simply AgMag). The magazine is sent early in the school year for beginning readers. Teachers can use it when the reading level of their students matches the reading level of the magazine. We publish two issues each school year, in October and March. Enjoy!

The AgMag2 series is made possible due to the generous financial support of Compeer Financial Services, a long-time supporter of the MAITC education program.

Why Ag in the Classroom?

Previously, people were very aware of the role agriculture played in their lives—it meant survival. Nearly everyone—men, women, and children—worked the land.

Agriculture still means survival. That will never change. But as time goes on, fewer people have close contact with farming. They’re not aware of their own—and the nation’s—total dependence on agriculture. Think about it:

- Fewer than 2 out of 100 Americans work directly in production agriculture (farming). This small group meets the food and fiber needs of the nation as well as many people abroad.
- Agriculture, along with its related occupations, is one of the nation’s largest industries. It generates billions of dollars each year; one out of every five jobs depends on it in some way.

Agriculture is constantly changing. But one thing remains the same: Agriculture is a vital part of your day! Even as early as the primary grades, it’s important for students to gain an understanding and appreciation for the ways agriculture touches their lives, each and every day. Food doesn’t magically appear in the grocery store or on the kitchen table. It all starts with agriculture.

Box:

Minnesota Academic Standards Connection

Subject	Standard Code	Benchmark
Social Studies	2.2.4.5.1	Classify materials that come from nature as natural resources (or raw materials); tools, equipment and factories as capital resources; and workers as human resources.
Science	2.4.1.1.1	Describe and sort plants into groups in many ways, according

		to their physical characteristics and behaviors.
English Language Arts	2.2.1.1	Ask and answer such questions as who, what, where, when, why and how, to demonstrate understanding of key details in a text.
Health	National Health Standard 1	Students will comprehend concepts related to health promotion and disease prevention to enhance health.

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AGRICULTURE: Growing plants and raising animals that people use for food, clothing, and many other things every day. It's also harvesting those farm products and getting them to us so we can use them. Agriculture is the industry that grows, harvests, processes, and brings us food, fiber, fish, forests, sod, landscaping materials, and more. It uses soil, water, sun, and air to produce its products. The process starts on farms, orchards, gardens, and ranches with the growing and the harvesting of crops and livestock, then moves to processing plants before finally traveling as finished products to stores, farm markets, lumberyards, greenhouses, and more where consumers buy the products. Agriculture is connected in some way with almost everything we eat, wear, and use.

Quote from an Unknown Source: "Agriculture is not simply farming. It's the supermarket, the equipment factory, the trucking system, the overseas shipping industry, the scientist's laboratory, the houses we live in, and much more. It has an effect on the air we breathe, the ground we walk on, the water we drink, and the food we eat."

CAPITAL RESOURCES: The things required to run a business. For food products, this would include things like tools, equipment, machinery, and factories.

CASH CROPS: Crops grown by farmers not to be consumed by those farmers, but sold for money.

CROPS: Plants which are grown and harvested to feed people and animals or to make other things people need.

DISTRIBUTION: Delivering things from a processor or factory to a store or business.

FARM: Areas of land where plants and animals are grown or raised for food, clothing, and more.

FARMER: A person who lives and works on a farm (also called producers). Farming is a career; farmers make money by selling their farm products.

FARM (Agriculture) PRODUCTS: Animals or plants raised on farms, or products made from them. Raw materials often must be changed (processed) to be of use. Example: Sheep are sheared to produce wool, but a hunk of raw wool has no practical purpose to someone who needs clothes. The wool is cleaned and processed into yarn, fabric, and eventually clothing, which are woolen products people can use.

HARVESTING: Gathering ripe crops from the field.

HUMAN RESOURCES: The people needed to run a business. For food products, this includes farmers.

NATURAL RESOURCES: Raw materials needed to create products. For food, that includes seeds, soil, water, and sunlight.

PROCESSING: Taking raw produce (example: potato) and changing it into something else (potato chips).

STORAGE: Putting things in a place while they're not being used.

TRANSPORTATION: Taking people or things and moving them from one place to another.

AgMag 2 Cover—Agriculture, the Land, and You! (Social Studies)

(See Agriculture in the Glossary. The goal of this page is to guide students to think about how farmers and consumers are interdependent, as well as beginning the discussion of the growing, harvesting, and processing processes that will be more fully developed on pages 2-3.)

Discussion Prompters

1. What makes "Agriculture, the Land, and You" a good title for this page? (Each of the products mentioned in the article and many shown in the photos started out with a connection to the land, the soil. They end up being used by people.)
2. What connections to agriculture do you see in these photos? (All of the photos show items from agriculture, and all are grown in Minnesota)
3. Minnesota has a large agricultural industry. Tell students how farmers here grow everything from plants to livestock to dairy animals to landscaping materials.

Minnesota Grown Activity Answers

Correct answers: Turkey and sugarbeet

Page 2-3—Super Soy and King Corn

Discussion Prompters

Tell students that soybeans and corn are Minnesota's leading cash crops (definition in the Glossary above). They have many different uses. Corn can be used to feed both farm animals and humans, and it can also be used for ethanol. Soybeans are used to make food products (such as oil, meal, and tofu) as well as biodiesel. You can show students these videos that explain the use of soybeans for biodiesel and corn for ethanol:

Soybeans used to make biodiesel: <https://www.youtube.com/watch?v=8IbnRYTgSGM&t=461s>

Corn used to make ethanol: <https://www.youtube.com/watch?v=xsROhOMIYdU>

Planting and Harvesting

Why are soybeans and crops planted in April and May in Minnesota? (In winter, the ground is too cold. But if farmers wait too long in the spring, there may not be enough time for the plants to grow to maturity.)

Storage and Transportation

Why is it important to prevent mold and spoiling? (Those foods would be ruined, the farmers could not sell them. The farmers would lose money.)

Processing

Have the students discuss the different methods of processing. Ask them to list different kinds of foods they eat that have changed from how they came from the farm. (Corn may be canned or frozen, it may be made into tortillas or cornbread, etc.)

Distribution

Show students images of food products that contain corn and/or soybeans. Ask them to identify which ones have corn and which have soybeans.

Fun Facts

To share with your class:

1. The U.S. produces nearly half of the world's soybeans.
2. Coffee cups, grocery bags, even surfboards made from corn plastic biodegrade in just a few months. The key is proper composting.
3. Henry Ford once built a car from soybeans. It was so tough he could beat on it with an axe!
4. Most of the corn grown in Minnesota is field corn. Its hard kernels are a main ingredient in livestock feed and industrial products. What is the sweet and tasty corn that you eat called?

Page 4: Natural, Capital, and Human Resources (Social Studies, Science)

Discussion Prompters:

Explain what a resource is: Something that is necessary to do or have something else.

The three kinds of resources needed by farmers are natural, capital, and human. Ask students to discuss why all three are needed by farmers. (Humans are needed to plan, plant, and harvest crops. Tools,

equipment, and factories are needed to help humans grow, harvest, process, and distribute foods. Seeds are needed to plant crops, while soil, sun, and water are needed to help crops grow. In addition, livestock needs water to grow.)

Which Resources? Activity Answers

Natural Resources: Soybean and corn seeds, soil to plant them in, water, sunlight

Capital Resources: Elevators, storage bins, trucks

Human Resources: Farmer, truck driver, soybean and corn processors, store employees

Page 5—Corn and Soybeans: Healthy Foods

Discussion Prompters:

Talk about the different nutrients in corn and soybeans and why they're important. Have the students discuss the different kinds of foods made from corn and soybeans. Ask which are their favorites.

Sweet Corn vs Field Corn

Talk about the differences between sweet corn and field corn:

We eat sweet corn in the whole kernel, either on the cob or removed from the cob and canned or frozen. Field corn is only eaten after it's been processed into things like corn tortillas or corn flakes.

Sweet corn is juicy and sweet, while field corn is hard and dry.

Optional Activity

Share this corn fritter recipe with your students: <https://www.annabelkarmel.com/recipes/sweetcorn-fritters/>

Page 6—Food Safety

Discussion Prompters:

Why is food safety important? (To prevent food-related sickness)

Discuss the ways listed in the AgMag magazine to keep food safe. Which ones have they done? Which ones could they do? What else can they think of?

What Is Safe Where? Activity Answers:

Corn Tortillas: Fridge, freezer

Milk: Fridge

Ice Cream: Freezer

Bacon: Fridge, freezer

Tofu: Fridge

Broccoli: Fridge, freezer

AgMag is a publication of Minnesota Agriculture in the Classroom (MAITC). The program is a public/private partnership between the Minnesota Department of Agriculture and the Minnesota Agriculture in the Classroom Foundation. This publication is made possible with special funding from Compeer Financial. MAITC Program Staff: Keri Sidle and Sue Knott. Writer and Editor: Amy Rea. Creative

Direction, Design and Production: Solberg Creative, LLC. Educational Consultants: Amy Wills and Jackie McCormick.

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