

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!

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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 the nation’s largest industry. 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	1.3.2.3.1	Compare physical and human characteristics of a local place and a place far away on a globe or map (such as a place in an equatorial or polar region).
Social Studies	1.2.3.5.1	Explain that people trade (voluntarily) when they each expect to be better off after

		<p>doing so. <i>For example: Barter— a trade with a friend (such as your toy for her book) will happen only if you want her book more than your toy and she wants your toy more than her book.</i></p>
Science	1.4.1.1.1	Describe and sort animals into groups in many ways, according to their physical characteristics and behaviors.
Science	1.4.3.1.1	Demonstrate an understanding that animals pass through lifecycles that include a beginning, development into adults, reproduction, and eventually death.
English Language Arts	1.2.7.7	Use the illustrations and details in a text to describe key ideas.

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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."

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

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.

GROWING SEASON: Period of the year that is warm enough for plants to grow and ripen.

AgMag 1 Cover—Agriculture is Everywhere!

(See Agriculture in the Glossary. The goal of the first three pages of your AgMag 1 is to define agriculture and guide students to think about how many things in their everyday world are connected to agriculture.)

Discussion Prompters

1. What is agriculture? (Invite students to offer their own definitions. Some may say "farming" or "milking cows." Agriculture starts on the farm, but includes all the people and places which harvest the farm crops, change them into forms we can use and get them to stores where we can buy them. It is all the businesses and workers who get food, clothing, furniture, landscaping trees, lumber, and more from the farms to our homes, schools, and communities.)
2. Who were the first farmers? (Many years ago, Native Americans lived on the land where we live today. They hunted deer, buffalo, and small animals in the forest. They raised crops (corn, squash, and beans) and harvested nature's crops (berries, nuts, maple syrup, wild rice). All their food, homes, clothing, weapons, and toys came from the land and water. Many of the foods we eat at Thanksgiving and year-round are thanks to Native Americans.)
3. How has the job of the farmer become easier today than it was long ago? (Modern machinery has replaced horse or oxen power and old-fashioned tools. Scientists have developed plants that can grow in many different weather and soil conditions. Animal nutritionists and veterinarians help keep farm animals healthy.)
4. Do you know someone whose job is connected to agriculture? How?
5. Some students may need help connecting items at the bottom of the page back to their plant and animal sources. Discuss as a class, then invite them to mark "P" by the items that come from plants and "A" by the items that come from animals.
6. Ask students to look around the classroom. What things in the room might come from agriculture, and what source of agriculture did they come from? Examples might include pencils made from wood (trees), soles of tennis shoes (rubber), or items of clothing (wool or cotton).
7. Look at the five items pictured in the yellow box on the first page. Where did they come from?

Answers: **pancakes** (wheat, syrup from trees, butter from dairy cows); **blue jeans and sweatshirt** (cotton); **notebook and pencil** (wood from trees); **soap** (may have many different ingredients including soy and other vegetable oils, fats from cattle, scent oils like almond, coconut or mint, honey, beeswax, wheat germ, oatmeal, and lanolin from sheep).

Plant, Animal, or Both? Answers:

Animals (A): Macaroni and cheese, pizza, mittens, boot

Plants (blue): Toilet paper, blueberries, macaroni and cheese, apple, pizza

Page 2—Farm Animals

- This page shows some of Minnesota's important farm animals. Share this information with your students:
- Milk cows (also known as dairy cows) are raised to produce milk, but they are also eaten as meat. Cows need clean bedding (straw, shredded newspapers, mats, waterbeds, sand) to lay on. They also need nutritious food and clean, fresh water. They need a veterinarian's care to keep them healthy and help them recover when they're ill.
- Pigs are raised for meat. Most pigs are raised in barns to keep them safe from weather and predators. They need a clean place to sleep, nutritious food, and fresh, clean water. They need a veterinarian's care to keep them healthy and help them recover when they're ill.
- Poultry (chicken and turkeys) are raised for meat and eggs. They are raised in barns, although some have access to the outdoors. There are two different kinds of chickens: broilers and layers. Broilers are raised in an open-floor barn and not kept in cages. They must have constant access to fresh water and feed. Their barn floors are covered with bedding. Layers also need a nutrient-rich feed. Some layers are raised in special caging/housing systems in barns, while others are free-range. Turkeys are primarily raised in barns, and roam freely inside the barn. They need a special diet of corn and soybean meal mixed with vitamins and minerals. All forms of poultry need a veterinarian's care to keep them healthy and help them recover when they're ill.
- Sheep are primarily raised in barns or other types of farm buildings. They need access to fresh, clean water and a healthy diet. They need a veterinarian's care to keep them healthy and help them recover when they're ill.
- Horses need both indoor shelter and outdoor areas to graze and roam. They need space to exercise. They're capable of surviving on hay, but can also grow with commercial feed. Fresh water is needed, and many horse farmers keep salt blocks in the barns so the horses will get the sodium and chloride they need for their health. They need a veterinarian's care to keep them healthy and help them recover when they're ill.

Discussion Prompts

1. Discuss each animal, what it eats and what it needs to be comfortable, safe, and healthy. How do they care for each of these animals?
 - (Nutritious food, fresh water at all times, warm shelters, protection against predators for smaller animals, vet care for animals, etc.)
2. What are the differences between mammals and birds?
 - (Mammals have fur or hair, bear live babies, and produce milk for their young, etc. Birds have feathers. Most can fly. Their young hatch from eggs, etc.)

Activity:

Bird or Mammal? Have students put an M in the box by each mammal and B in the box by each bird.

How many mammals? 4 (milk cow, pig, horse, sheep)

How many birds? 2 (chicken, turkey)

Page 3—Animal Parts**Discussion Prompts**

This page discusses the different kinds of special parts some animals have and what the animals use them for.

1. Why do animals have these parts? (to help them and protect them in various ways)
2. Did any of these surprise you? Which one? Why?
3. Do you know what it is called when a farmer cuts the wool off sheep? (shearing)

Activity:**Matching:**

Have the students draw a line from each photo to the text box that describes it.

Answers: Horse photo to Tails; Cow udder photo to Udders; Hooves to Split hooves; Sheep to Wool

Suggested activity:

Balancing: Explain to students that split hooves help animals balance. Then lead them on a physical balancing activity, which could be having them stand on one foot, or balance across a low balance beam or narrow curb.

Page 4—Why We Trade

This section introduces the idea of trade in agriculture. It may be that many students don't realize that things like bananas and oranges don't grow in Minnesota.

Explain the concept of a growing season. A growing season is the amount of time different plants need to fully grow and ripen. Because Minnesota has a shorter, cooler season than areas closer to the Equator, it can't grow things that need a longer growing season or more warmth. These include bananas, citrus fruits, cacao to make chocolate, avocados, coffee beans, etc.

The only way to have these items in Minnesota is to trade for them. Minnesota's soil and climate lets us grow corn and soybeans, crops highly valued in other parts of the world that may not have the right soil, climate, or even space to grow them. Other countries use things like corn and soybeans to make other foods like tofu and tortillas, or to feed their own farm animals. We sell these crops to those countries. In turn, we use the money from selling those crops to buy the foods we can't grow here. We're all better off because everyone gets the food they want, and the farmers earn money for their work.

1. Why is it good for farmers to be able to sell foods to other countries?
2. Why is it good for us to be able to buy foods from other countries?

Activity:

Have students circle their favorite foods that are not grown in Minnesota (none of the foods pictured grow in MN). Explain to them that these are foods that cannot be grown in Minnesota. Also note that these don't represent the only countries in the world that grow mangoes, avocados, etc. Many of the highlighted items grow in the same region because they have similar growing needs. This map is only meant to illustrate the idea that things we enjoy eating in Minnesota are not always grown in

Minnesota. But we can trade things grown in Minnesota with other countries to get things like chocolate and bananas. Then help them think about other foods that don't grow in Minnesota.

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