

AgMag 3 Spring 2021 Teacher's Guide

Why Ag in the Classroom?

Agriculture means survival. Over time, fewer and fewer people have close contact with [farming](#) and the total agricultural sector. They're not aware of their own and society's total dependence on [agriculture](#). People must be agriculturally literate in order to make responsible decisions affecting this giant lifeline.

Teaching students to be agriculturally literate brings their learning to life. Helping students understand the farm-to-table connection is important in our consumer-driven society. That's what the student Minnesota AgMag Series is all about.

About Your AgMag

The AgMag is a great supplement to your social studies, science, or language arts curriculum. The AgMag has particular appeal to the study of Minnesota history and geography. You'll get three issues per school year: October, January, and March.

AgMag Theme: Agriculture, the Land, and You!

- **Overview of Producers and Consumer roles in the Agriculture System**
- **What the Agriculture System is and examples of how it works**
- **The farmers role in the Agriculture System**
- **A Turkey's life in the Agriculture System**
- **Minnesota's Top Crops**
- **Egg Activity: What Do Animals Need to Survive?**
- **Agriculture Inventions**

Integration Ideas

Social Studies

- Diagram the path of production for a processed product, from farm to table

English Language Arts

- Ask students to identify key ideas and details and build their vocabulary through the AgMag's informational text.
- Use agriculture as an inspiration for creative writing activities and group discussions. Ideas: Stories from the points of view of plants or animals that depend on humans; predictions for agriculture in 2050 (or future years); letters to children in other countries with descriptions about agriculture here and questions about agriculture there.

Science and Math

- Have the students create diagrams of an animal/plant of their choosing following the examples on page 6 to help them identify similarities and differences between different organisms.

Glossary

Some words in your AgMag may be unfamiliar to your students. Many are defined in the articles. There is also a glossary on the AgMag website: <http://mnagmag.org/glossary/>
Words you might wish to pre-teach are:

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."

PRODUCER: a person, company, or country that makes, grows, or supplies goods or commodities for sale. Farmers are producers.

CONSUMER: a person who purchases goods and services for personal use.

HUMAN RESOURCES: the workers and employees who help process the product.

NATURAL RESOURCES: materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain.

CAPITAL RESOURCES: man-made tools and equipment used to produce a product. Examples of capital resources are factories, equipment, and tools such as hammers, saws, and computers.

Minnesota Academic Standards Connection

Subject	Standard Code	Benchmark
Social Studies	3.2.4.5.1	Explain that producing any good or service requires resources; describe the resources needed to produce a specific good or service; explain why it is not possible to produce an unlimited amount of a good or service.
Social Studies		Explain how agricultural events and inventions affect how Americans live today (e.g., Eli Whitney - cotton gin; Cyrus McCormick - reaper; Virtanen - silo; Pasteur - pasteurization; John Deere - moldboard plow)
Science	3L.3.1.1.2	Develop multiple models to describe how organisms have unique and diverse life cycles but all have birth, growth, reproduction, and death in common. (P: 2, CC: 4, CI: LS1) Emphasis is on the pattern of changes organisms go through

		during their life. Examples of models may include diagrams, drawings, physical models, or computer programs.
Science	3L.4.2.1.1	Obtain information from various types of media to support an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.** (P: 8, CC: 4, CI: LS1) Examples of structures may include thorns, stems, roots, colored petals, heart, stomach, lungs, brain, and skin. Examples of media may include electronic sources.
English Language Arts	3.1.5.2	Use informational text features (e.g., captions, subheadings, glossaries, indexes, and interactive images) to understand information relevant to a given topic.

AgMag Cover (Social Studies)

Discussion Prompts:

- Where do you get food, clothing, or supplies to build houses? Where do you think those items come from? Who grows or makes them?
- What would we do if there were no farmers?

Engagement Activity: Where does this come from? Tracing Origins - the origins of everyday items

- The point of this short activity is to help students recognize that everything they use/consume comes from somewhere. Someone had to make, assemble, process, transport, grow, create that item from the earth's resources.
- Show your class a standard piece of paper (You could use almost any object, but we'll use paper as an example). Ask the class to help you track the process it took to get this piece of paper into their classroom. Ask the question "How did it get there? Or who made it that way?" at each step to find the next step until you get down to the raw material. Consider writing or displaying the steps in front of the class as you discuss the process so students can visually understand all the resources required.
 - Example:

Paper in school → someone bought the paper at the store and brought it to the school → someone stocked the paper on the shelves → someone shipped the paper to the store → someone made the paper at a warehouse → someone had to gather the materials to make the paper → someone had to grow the raw materials to make the paper.

- Feel free to try this example with other items the students suggest. Students can work in pairs for 5 minutes tracing the origins of an item of their choosing.
 - Note: this activity can be as simple or complex as you want it to be. As an engagement activity, this can be done in 5 minutes or less, but could be developed further into a research or informational writing project.

Page 2: Steps Along The Way

Discussion Prompts:

Where do the materials come from that make up what we eat, wear, and use every day?
Which takes more time to produce: Grain becoming a loaf of bread, or a carrot that goes into your salad?

Agriculture System

Consider taking a product (a food item would be most intuitive) and discussing each step of the agriculture system for that specific product. Ideas: Milk, cereal, granola bars, rice, etc.

Page 3: Naming & Matching. Meet The Farmer

Naming & Matching

Answers:

Top row, left to right: Distributing, Marketing, Consuming

Bottom row, left to right: Producing, Disposing, Processing

Meet The Farmer

For more information on raising sugarbeets, check out this [video!](#)

Discussion Questions

What role does the farmer (producer) play in the agriculture system?

Why are sun, air, water, and soil part of the agriculture system?

Page 4-5: Tracking A Turkey

Minnesota has 600 turkey farms! Minnesota has more independent turkey farmers than any other state in the U.S. These farmers raise between 40-42 million turkeys every year!

Discussion Question:

How are turkeys used?

What surprised you after you tracked the turkey?

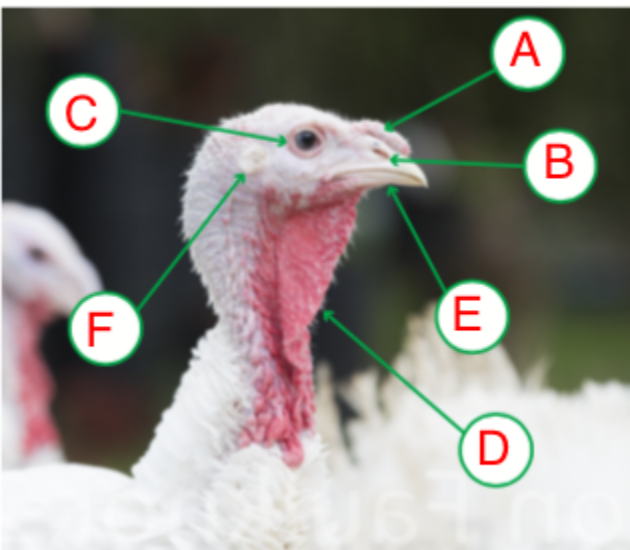
For more information on turkeys, visit: <https://www.eatturkey.org/>

For a history tie in, read this article explaining the history of the turkey and the tradition in which the President of the United States pardons the Thanksgiving Turkey each year:

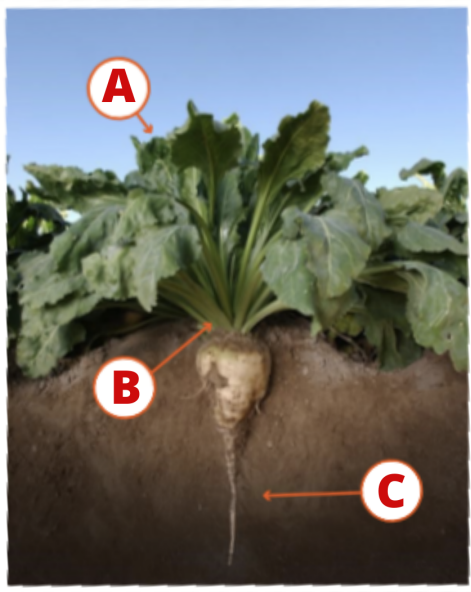
<https://www.eatturkey.org/history/>

Page 6: The Trophy Goes To...

Match It Up: Turkey



Match It Up: Sugarbeet



Page 7: Egg-cellent

This is a great hands-on activity for students to participate in that helps them diagram the different parts of an egg, as well as learn about the universal needs of living things. This activity has the potential to be messy (and fun!). Organize students into groups of 2-4 and let them work together to identify the different parts of an egg. Have them fill out the “Parts of An Egg Worksheet” (linked). There is also a powerpoint linked with more in-depth information on the anatomy of an egg if you’d like to go over the content as a class.

For the “Parts of An Egg” Worksheet, and the Facts about Chickens powerpoint, click the link below: <https://minnesota.agclassroom.org/matrix/lesson/138/>

Discussion Questions

What do animals need to survive?

Does a poult or chick need the same things to survive inside an egg as it does after hatching?

Materials needed:

Eggs

Containers

Toothpicks

Page8: Agricultural Inventions

To help students with this activity, brainstorm ways in which an Egg-catcher could be created. Some students may need a place to start so suggest they begin by thinking of materials they could use.

For a detailed historical timeline of Egg Farming, visit this link:

<https://unitedegg.com/about/evolution-of-u-s-egg-farming/>

If you'd like to incorporate more standards in this activity, check out our "Engineering an Egg-Catcher" Lesson Plan for some additional ideas:

<https://4-h.org/wp-content/uploads/2016/02/Agriculture-in-Engineering.pdf>