

AgMag 5 Fall 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 Connects Us All!

- **Overview of the What and Why of Agriculture**
- **What makes Minnesota such a great state for Agriculture**
- **Growing a future in Agriculture: profiles of different careers in agriculture**
- **Why are plants important?**
- **Hydroponic farming and how lettuce is grown without soil**
- **Minnesota 5th Graders connected to agriculture.**

Integration Ideas

Science/Math

- Read about hydroponic farming on pages 6-7, then grow your own hydroponic farm in your classroom.

Social Studies

- Have students interview someone they know who works in agriculture. Invite someone with a career in agriculture to come speak to the class about how they got involved in agriculture.

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 with characters who have agriculture careers; predictions for agriculture in 2050 (or future years); letters to children in other countries with descriptions about agriculture here and questions about agriculture there.

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.

Minnesota Academic Standards Connection

Subject	Standard Code	Benchmark
Science	5L.1.2.1.4	Plan and conduct an investigation to obtain evidence that plants get the materials they need for growth chiefly from air and water. (P: 3, CC: 5, CI: LS1) Examples of plants may include aquatic plants that grow without soil. Examples of observational evidence may include growth patterns for plants grown in different environments.
Geography	5.3.4.10.1	Explain how geographic factors affected land use in the North American colonies. For example: Geographic factors— climate, landforms, availability of natural resources.
Economics	5.2.4.6.1	Describe the concept of profit as the motivation for entrepreneurs; calculate profit as the difference between revenue (from selling goods and services) and cost (payments for resources used).
English Language Arts	5.1.5.3	Apply knowledge of text structure to understand and evaluate a wide variety of complex literary and informational texts.

AgMag Cover: Agriculture Connects Us All

Discussion Prompts:

- In what way are we connected to agriculture?
- What is Agriculture?

Page 2: What is Agriculture?

Discussion Prompts:

What do Forests, Food, Flowers, Fuel, and Fiber all have in common?

The 5 F's of Agriculture

Consider finding examples of agriculture businesses or products that fit under each of the five F categories. You could bring in examples, or brainstorm examples together as a class. Draw a T chart on the board and make a list of agricultural products that fit under each of the five F categories.

Why Agriculture?

Explain that more people have jobs in the agriculture industry than one might think. Ask for volunteers of students whose parents/guardians have careers in any of the fields listed. After the class has read about the different career categories, have them share with a partner in class which agriculture career field they would be interested in pursuing.

Page 3: What Makes Minnesota Such a Great State for Agriculture?

Find it on the Map:

Minnesota has 4 Growing Areas

As a class, have students identify which growing area you live in.

Discussion Questions

What agricultural products are grown where you live?

Page 4-5: Grow Your Future In Agriculture!

Minnesota is a land of opportunity. With so many valuable and diverse resources in our great state, there are unlimited ways one can have a career in agriculture. Have students read about these people who have careers in Agriculture.

Discussion Question:

- Post reading: What agriculture career was most interesting to you? Which one was least appealing? Which career would you like to learn more about?
- What agricultural careers are in the area you live? List examples. Consider inviting one of them to come and speak to your class and answer questions.

Page 6-7: Why Are Plants Important?

The North Market Hydroponic Farm

For more information on hydroponic farming, show your students this video: _____

How Do These Lettuce Plants Grow If They Aren't in Soil?

Why do lettuce plants do well in a hydroponic system?

Direct students' attention to the Plant Comparison box. Read and discuss the questions in the box together as a class or have students divide up into pairs to discuss the questions.

Discussion Question:

- Why are plants important?
- What are the pros and cons of hydroponic farming?
- Why would a farmer choose to grow plants in a hydroponic system instead of planting traditionally in a traditional field?

Page 8: Minnesota 5th Graders - Look at them Grow!

How have you connected to agriculture? Submit your photo or video at mngmag.org/connect5 and you could be featured in our next AgMag!

Encourage students to read over the examples on this page. What ways can your students connect with agriculture? Consider discussing ideas and potentially having a field trip or creating an agriculture connection in your classroom!

Ideas for connecting your classroom to Agriculture:

- Field trip to a nearby local farm
- Farm in a glove activity (link needed)
- Build a hydroponic farm in your own classroom
- Learn how plants grow by observing how beans sprout (link)

(I think there is a list of ideas somewhere on the Agmag Website--ideas where that page might be located?)

Guess the Picture:

Answer: Pluck Flower Farm, page 4

Crack the Code:

Answer: Iceberg