

## Why Ag in the Classroom?

In times past, 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 and 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:

- Only about 2 out of 100 Americans work 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. It has massive impact on the American economy, greatly influences the U.S. international balance of trade and directly affects the number of jobs here at home.

Our citizens must be agriculturally literate in order to make responsible decisions affecting this giant lifeline. Building that literacy in tomorrow's leaders is what Ag in the Classroom is all about.

## Academic Standards Connection

The student Minnesota AgMag and other educational materials from Minnesota Agriculture in the Classroom can meet many

of the academic standards. These materials can serve as a wonderful "real life" connection and supporting piece as you incorporate the standards into your classroom activities. Here are a few examples of potential connections:

### SOCIAL STUDIES

**(Minnesota History Strand) Standard:** The student will demonstrate knowledge of Minnesota's indigenous peoples.

**(Economics Strand) Standard:** The student will understand the concept of interdependence in relation to producers and consumers.

### SCIENCE

**(History and Nature of Science Strand) Standard:** The student will understand how science is used to investigate interactions between people and the natural world.

**(History and Nature of Science Strand) Standard:** The student will recognize that science and technology involve different kinds of work and engage men and women of all backgrounds

### LANGUAGE ARTS

**(Reading and Literature Strand) Standard:** The student will use a variety of strategies to expand reading, listening and speaking vocabularies.

### MATHEMATICS

**(Data Analysis, Statistics and Probability Strand) Standard:** The student will represent and interpret data in real-world and mathematics problems.

## Hello Out There (Resources)

### MINNESOTA AGRICULTURE IN THE CLASSROOM

Attn: Al Withers, Program Director  
625 Robert Street North  
St. Paul, Minnesota 55155  
Telephone: 651-201-6688 • E-mail: alan.withers@state.mn.us  
[www.mda.state.mn.us/maitc](http://www.mda.state.mn.us/maitc)

Great resources available! Tell your primary level colleagues about our **new AgMag Jr.**, tell your middle school and junior high science colleagues about the **"Fields of Energy" DVD** and tell your media specialist about our **children's literature book bundle**.



**Now Available!** New full-color Minnesota Commodity Card Set (20 Cards)



If your students are studying the states, have them visit the National Ag in the Classroom web site (click on State Profiles, then State Websites on the home page) to learn about each state's unique agriculture. You'll also find a wealth of teacher resources available (mostly free) from other state programs: [www.agclassroom.org](http://www.agclassroom.org)

### \$\$\$\$ Grants Available \$\$\$

Don't forget to apply for a MN Ag in the Classroom Ag Literacy Grant! The next application deadline is February 1, 2010. You can request up to \$400 this year, and we are encouraging applications in the areas of youth gardening, ag-related field trip experiences and unique integration and innovation ideas. Give it a try!

### MAITC FOUNDATION

MN Ag in the Classroom faithfully continues to provide educators with free educational resources. But, that doesn't mean you can't help support us with a small donation to the cause. Check us out at: [www.maitcfoundation.org](http://www.maitcfoundation.org)

### MINNESOTA HISTORICAL SOCIETY

For great Minnesota historical pictures go to the Society's Photo and Art Database at: [www.mnhs.org/collections](http://www.mnhs.org/collections)

# About Your AgMag

Your AgMag is distributed primarily to teachers in grades studying Minnesota (usually fourth or sixth) or for use in science. If the magazine fits better into the curriculum program at another grade level, we encourage you to pass the material on to the appropriate teachers.

Offered at no cost to you, the AgMag is a product of Minnesota Agriculture in the Classroom. You'll receive three issues this school year: mid October, mid December and early March.

This first issue of your AgMag is designed to help you:

- provide students with a general understanding of agriculture and human dependence upon it, today and in the past.
- strengthen understanding of the role agriculture plays in students' daily lives and careers related to agriculture.
- build awareness of Minnesota agriculture, its economic importance and how the state's geographic features influence agriculture.
- offer insights about native foods and Native Americans prior to the settlement of Fort Snelling.
- promote food safety and build awareness of both personal and government responsibility in keeping food safe.

## Integration

Your AgMag materials are created by experienced classroom teachers. An Editorial Review Committee provides content ideas and reviews each issue.

Some teachers use the magazine as a separate lesson; others integrate magazine content into specific areas of the curriculum. The subject matter and skills listed will help you select appropriate agriculture activities to integrate into other curriculum areas.

**Language Arts, Reading Literacy:** Use the articles and activities to develop a variety of skills: outlining; nonfiction reading; reading for the main idea; vocabulary development (bold words, pretest/post-test, activities throughout the AgMag, reproducible pages in Teacher Guide).

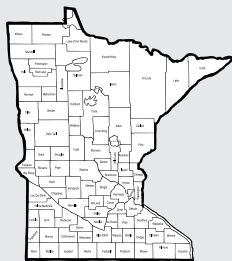
**Math:** Interpret state agriculture rankings, an annual precipitation graph and State Fair figures.

**Creative Writing:** Many of the articles are great launchers for creative writing. Examples: adventures at the fair, tracing family history to agricultural roots, life at Fort Snelling or in an early Indian village.

**Geography, Map Skills:** See activities pages 4, 5 and 7. Locate the Minnesota communities named throughout the AgMag on a state map. Use the reproducible Minnesota map in the Teacher Guide as a handy aid for a variety of Minnesota concepts.

## Map Ideas (reproducible, page 6)

- Color the top-producing counties for various commodities. As a guide for coloring, Commodity Cards can be downloaded and printed from the Minnesota Agriculture in the Classroom website: [www.mda.state.mn.us/maitc](http://www.mda.state.mn.us/maitc)
- Locate and label major Minnesota cities, major rivers and highways.
- Locate your town or community. Identify counties to the north, south, east and west of your county. Where is your county seat?



**History, Social Studies, Science and Current Events:** See the cover and the articles and activities on pages 6, 7 and 8.

## In This Guide: Don't Miss...

- **SHOW WHAT YOU KNOW** pretest and post-test on page 4. Check your students' knowledge of key agricultural concepts before and after reading the AgMag!
- Discussion prompts, background information, extended activities and answers.
- Two reproducible activities: Tracking Trouble and Minnesota Map. See "Map Ideas" in column 1.

**Highlights of Your Three 2009-10 Issues Include:**

**October: Overview: Agriculture is Everywhere**

- Agricultural production, processing, distribution
- Major Minnesota agriculture crops/growing areas
- Minnesota agribusinesses and cooperatives
- American Indian agriculture and native foods (prior to 1825)
- Food safety
- State Fair fun and facts

**December: Overview: From the Land to You; Ag in a Changing World**

- The production/processing/distribution cycle
- Sourcing popular foods to their origins (pizza)
- New developments in agriculture
- Global connections
- World hunger and population trends
- Early settlement and foods (1825-1970)

**March: Overview: Agriculture and the Environment**

- The food, land and people connection
- Gardening for kids
- Earth-friendly agriculture
- Minnesota's water resources
- Newcomers and new foods (1950s-present)

## Glossary

Some words in your AgMag may be unfamiliar to your students. These words often appear in bold type or in italics. Many are defined in the articles. Words you might wish to pre-teach are: **agriculture, by-products**, (*cover*); **industry, livestock, food, fiber, forests, turf and landscaping materials, production, processing, distribution** (pg 2); **logo** (pg 3); **soil types, terrain, rainfall, growing season** (pg 4); **foodborne illnesses, epidemiologist, food recall, contaminated** (pg 6).

## Discussion Prompters

**Cover** (Social Studies)

1. Agriculture is everywhere. What are the agriculture connections on this page? (*Zucchini, clothes, football, wood, house, scarf, hotdog and bun, marshmallow and stick, hat, apple and seeds.*)
2. Why is it important for all people to know about agriculture? (*We all depend on agriculture for food, clothing and shelter. It's important to understand how our needs are supplied as we make decisions about using land, protecting resources, keeping food safe and much more.*)

## Student Pages 2 and 3 (Social Studies, Economics, Science)

1. What have you eaten or worn today that came from an animal? A tree or plant? The soil? Which came from beef or dairy cattle? Hogs? Poultry?
2. Why do we say agriculture depends on natural and renewable resources? (*The things that are produced, processed and distributed all are dependent on soil, sun, air and water in some way. Animals and plants are considered renewable resources.*)
3. After students match the jobs to Production, Processing and Distribution, discuss some of the careers that are unfamiliar to them. Guide students to see that each category includes many different and some overlapping roles.
4. Discuss agriculture's customers. Who are they? How do they determine what is produced? (*Customers can include each of us as well as other buyers: processors, distributors, other countries, etc. Producers must meet customer wants/demands to succeed.*)
5. Food production stories and advertising are always in the media. Compile a media journal of ads and articles about Minnesota agribusinesses and cooperatives. Why are logos important? (*They provide a quick visual way to identify companies and products.*) What Minnesota products are often advertised?
6. What are some connections between agriculture and a baseball stadium? (*Sod, uniforms, baseballs, bats, food, etc.*)

## Student Pages 4 and 5 (Geography, Map Skills)

1. What geographical features of Minnesota make it a good state for agriculture? (*Variety of terrain and soil types, climate, rainfall, weather.*)
2. What makes the Red River Valley (Northwest area) such a high-producing crop area? (*Rich, fertile soils, adequate moisture, large flat areas for mechanized agriculture.*)
3. Which of the four regions has a main crop that people may not always think of as agriculture? Explain your answer. (*The northeast region. In the past, natural forests were cut down and not replanted. Today, forests are replenished and trees are considered a renewable crop.*)

4. Discuss annual precipitation as an average of data collected over many years. Remind students of weather events such as drought and flooding. What effect do these have on farmers? How could deviations eventually impact our food supplies and prices? What was the main precipitation concern in 2009? (*Long, dry periods with less than average rainfall.*)

## Student Page 6 (Current Events, Science, Social Studies)

1. How does your family learn about food recalls? (*TV news, newspapers, mail, in-store signs, word-of-mouth, phone messages if a store can trace customer purchases, as they can at membership stores such as Costco, Sam's, etc.*)
2. Why is it important to pay attention to food recall notices? (*You might get sick if you eat the recalled food product. Your purchase price will be refunded.*)
3. What do your school cafeteria helpers do to keep your food safe? If you pack your own lunch to bring, what can you do to make sure it's safe? (*Be sure students get copies of the Tracking Trouble reproducible on page 5 of this Guide.*)

## Student Page 7 (History, Social Studies, Cultural Diversity)

1. Surf the net and check out the library for stories and legends about the Three Sisters. The crops were essential to the survival and nutrition of many Indian communities. What celebrations, customs and community events are based on these three important crops?
2. How did Indian communities prepare their foods? How did they preserve foods through the long winter months? (*Hunting and fishing were year-around activities. Meat, fish and many plant foods were dried in the sun and stored in earthen containers, baskets and in underground hollows.*)

## ANSWERS: Ag/Mag

### COVER

Connections to agriculture: See Discussion Prompter number 1 on page 2.

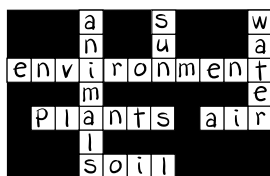
### AGRICULTURE: MORE THAN FARMING, Pg. 2

List labels:

A. Production; B. Processing; C. Distribution

Photos: C; B; A

Crossword



### CELEBRATING MINNESOTA AGRICULTURE, Pg. 3

1. Gold'n Plump – chicken – packaged chicken
2. Hormel – hogs – pepperoni and ham
3. American Crystal Sugar – sugarbeets – sugar
4. John Deere – steel – farm machinery
5. Boise – trees – paper
6. Schwan's – milk – ice cream
7. Land O' Lakes – milk – cheese and butter
8. Old Dutch – potatoes – potato chips
9. Malt-O-Meal – oats – cereal and snacks

### MINNESOTA AGRICULTURE, Pg. 3

Minnesota's biggest ag customers: Canada, Japan and Mexico

What made the difference? Modern machinery

### GROWING AREAS, Pgs. 4 and 5

1. C (Northwest) 2. B (Southwest) 3. D (Central/Southeast)
4. A (Northeast)

Leading sugarbeet county: Polk

Name the crop: Barley

Name the growing area: Northwest

### MINNESOTA RAINFALL: WHAT AND WHERE, Pgs. 4 and 5

1. Least rainfall: Northwest; Most rainfall: Central/Southeast
2. Specific crops need different amounts of moisture.
3. Above normal: Crops drown out or wash away. Yield is reduced. Below normal: Drought causes crops to wither or die. Yield is reduced.

Your turn:

Hay and Pastureland: Central/Southeast

Sugarbeets: Northwest

Corn and Soybeans: Southwest

Forest and Pine Trees: Northeast

Wheat: Northwest

### True or False, Pg. 6

True

### OUR BOUNTIFUL LAND: THE STORY OF FOOD, Pg. 7

Think and Discuss:

1. Indians in northern and southern Minnesota had different weather, soil types, terrain and growing seasons. Southern Minnesota is closer to the equator and generally warmer.
2. Once people could raise their own food they could build villages and settlements. Before this they had to move to continually search for food.

Four rivers:

Mississippi, Minnesota, St. Croix, Cannon

Two lakes: Lake Superior, Mille Lacs

### MINNESOTA STATE FAIR, Pg. 8

Fair attendance in 2001: 1,762,976

Total number of newborns: 170

### ANSWERS: Teacher Guide

#### SHOW WHAT YOU KNOW

1. b 2. a 3. b 4. b 5. a 6. c 7. b 8. c 9. a

#### TRACKING TROUBLE, Pg. 7

1. Separate
2. Chill
3. Cook
2. Clean

**Note to Teachers:**

You are encouraged to send the Pretest and Post-test results to Ag in the Classroom to help document student learning. Use the attached postage-paid evaluation card.

Name \_\_\_\_\_

Check one  Pretest  Post-test

## Show What You Know!

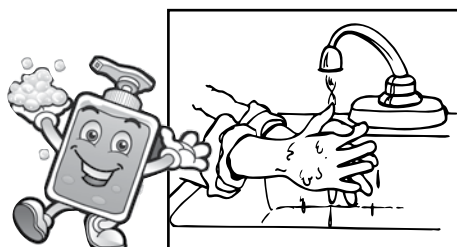
*Take this short quiz before you read your AgMag, then again after reading the magazine. See the improvement!*

- 1.** Agriculture involves the growing and harvesting of food, fiber, forests and  
a. metals.                      b. sod.                                      c. plastic.
- 2.** An **acre** is a land area about the same size as  
a. a football field.                      b. a school gym.                      c. a classroom.
- 3.** The same crops grow well all over Minnesota.  
a. true                                      b. false
- 4.** In agriculture, **production** means  
a. getting farm products from farm to consumer.  
b. growing of raw food and fiber.  
c. packaging products so they're ready for sale.
- 5.** What percent of Minnesotans work in food and fiber industries?  
a. 15                                      b. 40                                      c. 2
- 6.** The "Three Sisters" of crops are  
a. hay, oats and wheat.  
b. tomatoes, watermelon and peppers.  
c. corn, beans and squash.
- 7.** Minnesota's first farmers were  
a. Cherokee Indians.  
b. Dakota and Ojibwe Indians.  
c. Apache Indians.
- 8.** In 2008, Minnesota ranked first of all 50 states in production of  
a. soybeans and wheat.  
b. ice cream and butter.  
c. sugarbeets, green peas and turkeys.
- 9.** Fort Snelling is located  
a. where the Mississippi and Minnesota rivers meet.  
b. where the Mississippi and St. Croix rivers meet.  
c. where the Mississippi and Red River of the North rivers meet.

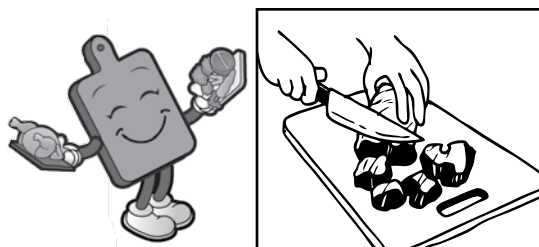
# Tracking Trouble

Bacteria can be lurking just about anywhere: in your kitchen, on your plate and even on your hands. Foodborne bacteria can't be seen, smelled or tasted. Yet, this invisible enemy can multiply and make you sick. Cross-contamination is the scientific word for how bacteria can be spread from one food product to another. This easily happens when handling raw meat, poultry, eggs and seafood. The safe way: Keep these foods and their juices away from ready-to-eat foods! That's not all. We consumers need to handle and cook food properly. Teach your family these important food safety tips:

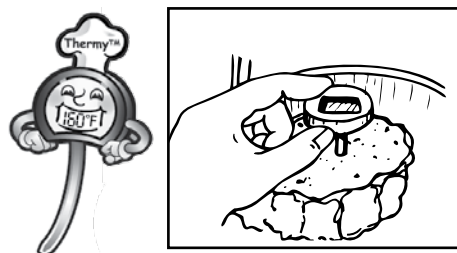
## Be Food Safe



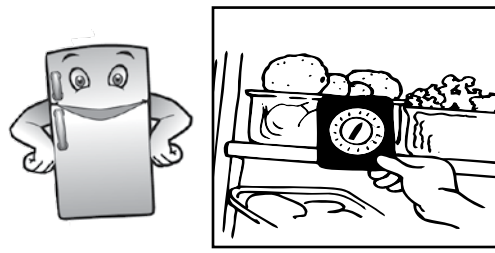
**Clean.** Wash hands with soap and warm water for 20 seconds before and after handling food.



**Separate.** Keep raw meat and poultry apart from foods that won't be cooked.



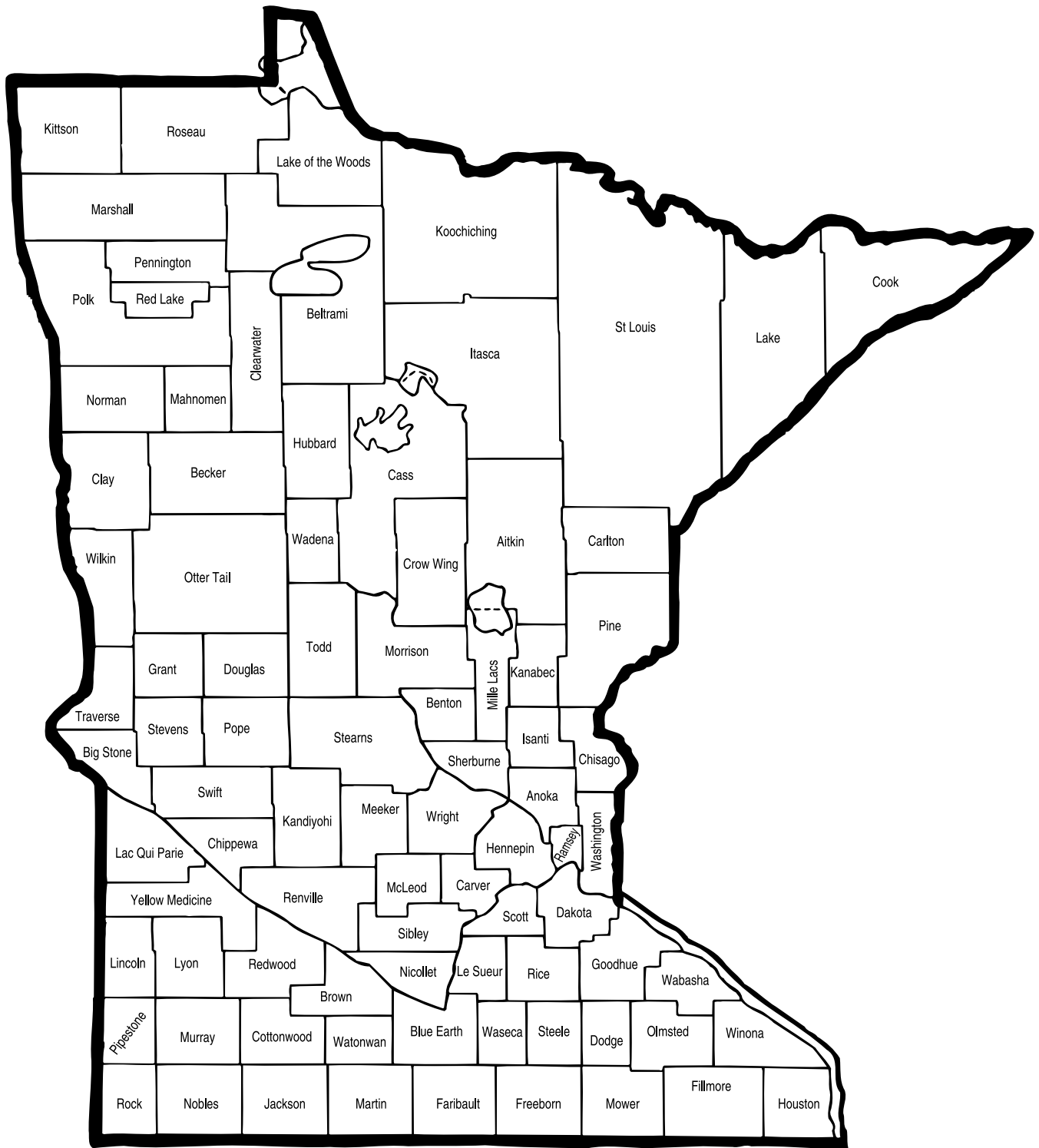
**Cook.** Use a food thermometer —you can't tell food is cooked safely by how it looks.



**Chill.** Chill leftovers and takeout foods within two hours. Keep the refrigerator at 40°F or below.

<p><b>These kids are going on a picnic. See the Be Food Safe chart. Identify the step you'd teach these kids to keep them food safe.</b></p>	<p><b>Safe Step</b></p>
<p>Javier used the same wood cutting board to form raw hamburger patties and slice the hamburger buns and pickles.</p>	
<p>Cassandra took the potato salad out of the cooler and set it under the tree so the cooler could hold the sodas.</p>	
<p>Armando grilled the burgers until they looked done.</p>	
<p>Josh cut up carrots, celery and apples without washing them or his hands.</p>	

**Remember** Food can be contaminated even if it looks, smells and tastes normal. Now you know how to be food-smart and food-safe!



# Minnesota

Minnesota AgMag and Teacher Guide is a publication of Minnesota Agriculture in the Classroom. Minnesota Agriculture in the Classroom is a public/private partnership between the Minnesota Department of Agriculture and the Minnesota Agriculture in the Classroom Foundation. MAITC Program Director and AgMag Project Coordinator is Al Withers. The publication is developed and written by Jan Hoppe, B.S. and Jane Duden, B.S. Both are experienced educators and educational materials developers. Design, layout and production are by Northern Design Group.