

North Dakota's Agricultural History

This issue of the Ag Mag focuses on North Dakota's agricultural history. The Ag Mag's information and activities are geared primarily toward the state's third, fourth and fifth graders. Three issues are developed each year. Subscriptions are free, but if you're not on the mailing list or if you know someone who wants to be added, contact the N.D. Department of Agriculture at 800-242-7535 or ndda@nd.gov.

The Ag Mag also is on the N.D. Agriculture in the Classroom website at www.ndda.nd.gov/aitc. This website includes many other student and teacher resources.

This magazine is one of the N.D. Agriculture in the Classroom Council activities that helps you and other K-12 teachers integrate information and activities about North Dakota agriculture across your curriculum in science, math, language arts, social studies and other classes. It's a supplemental resource rather than a separate program.

Introduction

Idea: Ask students to define agriculture. Remind them that it is the production, processing, distribution and consumption of food, fiber, forestry and fuel products, not just farming and ranching. Ask students to share some important events in North Dakota's agricultural history that they already know.

Idea: Have students write the alphabet from A to Z in a column on a piece of paper and try to come up with at least one word for each letter that's related to North Dakota's agricultural history (or present).

Native Americans: North Dakota's First Agriculturists

Idea: Study the Three Sisters Garden. Many Native Americans planted corn, beans and squash together in mounds since the three thrived together and provided a diverse healthy diet. The three plants' spiritual power also led to rituals with planting and harvest. "Buffalo Bird Woman's Garden" at <http://digital.library.upenn.edu/women/buffalo/garden/garden.html> provides excellent information and graphics. You might even be able to plant a garden, possibly working with an agriculture teacher or county Extension agent.

Idea: Read a summary of Lewis and Clark's Corps of Discovery expedition to highlight the foods they ate, especially while in present-day North Dakota during the winter of 1804-05.

Idea: Brainstorm or research ways food was stored before refrigeration.

Background Information:

Lakota Sioux called the North American bison Tatanka. Bison is the correct name, although buffalo is commonly used. The North American bison is found only in North America. Water buffalo are native to India and Africa.

Abraham Lincoln's Impact on North Dakota

Idea: Have students draw a map of the Northern Pacific Railway in North Dakota. See http://en.wikipedia.org/wiki/Northern_Pacific_Railway. What towns are along the railway? Why?

Background Information: The Northern Pacific Railway, also known as the NP, was given the nation's largest land grant (free land from the government) on which to lay tracks across Dakota Territory and head westward to the Pacific Ocean. In June 1872, a powerful black Northern Pacific steam engine chugged across the newly completed railroad bridge over the Red River of the North between Moorhead, Minnesota, and Fargo, Dakota Territory. The NP's president, George W. Cass, directed the railroad to cross the Red River from Minnesota and into the west. Fargo, N.D., was named after William George Fargo, and Moorhead, Minn., after William Garraway Moorhead - both directors of and investors in the Northern Pacific Railway.

People moved into the struggling little tent town of Fargo, and the NP Railway made Fargo its headquarters. A year later, as the tracks were continuing to be laid west toward Bismarck, the railroad ran into big money problems and had to stop laying track. The railroads sold some of their land for what became bonanza farms so they could continue westward.

Idea: What land-grant universities are students familiar with? See <https://nifa.usda.gov/resource/land-grant-colleges-and-universities-map>. North Dakota State University is an 1862 land-grant, and the state also has five 1994 land-grant colleges, which are tribal colleges that were given land-grant status in that year.

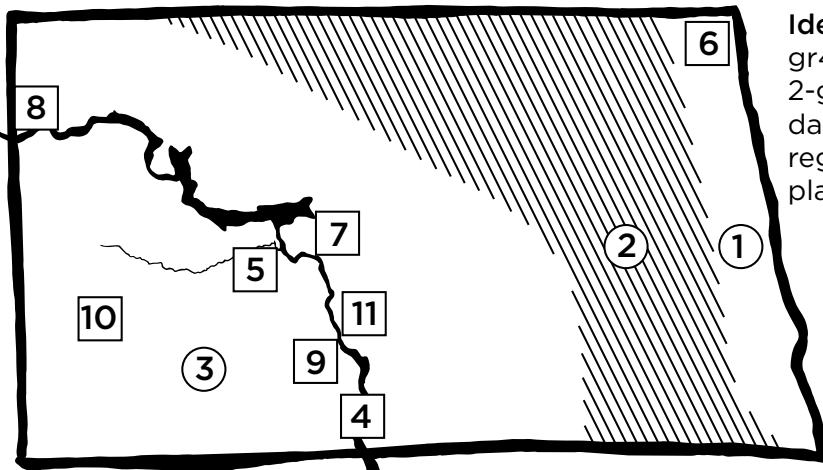
Answers to Lincoln's Legislation

- C. Dakota Territory** - Was organized in 1861 and then divided in 1889 to become the two states of North Dakota and South Dakota.
- B. Morrill Land-Grant Colleges Act** - Provided public lands for colleges specializing in agriculture and the mechanical arts so rural people could have an opportunity for higher education.
- E. U.S. Department of Agriculture** - This federal agency provides information and education, leads food safety efforts, markets ag products, provides nutrition programs and much more.
- A. Northern Pacific Railway** - A government charter made this the first train to lay tracks in Dakota Territory. Rail then became the primary transportation for settlers.
- D. Homestead Act** - Provided 160 acres of free land to settlers if they would build a home, raise a crop and live there for at least five years.

Idea: Share a map of Dakota Territory and help students determine boundaries of present-day states.

Idea: Ask students to read a book about life as a homestead family, such as "Little House on the Prairie" or "Sarah, Plain and Tall."

Answers to North Dakota's Roots are in Agriculture



Idea: Use the map at www.ndstudies.gov/gr4/geology-geography-and-climate/part-2-geography/section-3-three-regions-north-dakota to help students identify the three regions, and use other maps to discuss and place the rivers, cities and forts.

Answers to Life on the Early Farms

- | | |
|-------------|------------|
| 1. acres | 4. prairie |
| 2. settlers | 5. cabin |
| 3. citizens | 6. shacks |

Life on the Early Farms

Idea: Compare 160 acres to the area on which your school or another local landmark is situated. North Dakota's average farm size is just more than 1,500 acres, which is about nine times larger than a homestead. Discuss why the state's farms are larger now than they were in the late 1800s.

Idea: Ask students how many have parents or grandparents who lived on farms or ranches. Discuss why fewer people live on farms and ranches today than did in 1900.

Idea: Ask students about their heritage. Some students' families may have come to North Dakota from other countries as settlers in the late 1800s.

Idea: Divide students into teams, and have each team list the top 10 items they would need for their family to survive on their homestead. Have each team justify their items.

Idea: Ask students to imagine themselves living on the North Dakota prairie in the late 1800s. List three good things and three bad things about living in a sod house.

Idea: Have students design an advertisement to persuade people to homestead in Dakota Territory.

Idea: Have students write letters by hand about "their" experiences on the homestead. They can explain their chores on the farm, weather, family, playtime or hardship. They can put the letter in an envelope, draw a penny stamp and write a simple address (no ZIP codes yet). Without telephones and email, families wrote letters, took them into town to the post office and waited weeks for a response. Without newspapers, radio, TV and the internet, people sometimes waited for a month to find out what had happened elsewhere in the country.

Idea: Watch Prairie Public's "Homesteading" (<https://video.prairiepublic.org/video/homesteading-gebvmt/>) (56 minutes) with students, then have students develop their family trees and identify if any of their ancestors lived on North Dakota farms.

Idea: Use the National Archives' lesson plan on The Homestead Act of 1862 at www.archives.gov/education/lessons/homestead-act.

Bonanza Farms: *The Largest Farms in the World*

Idea: Study and possibly visit the Bagg Bonanza Farm at Mooreton, N.D., which is America's only restored bonanza farm. Search online for websites that describe the farm's history and show photos.

Background Information: Bonanza farms are usually thought of as producing crops, but workers also were needed to tend to the working livestock because most of the bonanza farm equipment was pulled by horses or mules.

George W. Cass, former president of the Northern Pacific Railway, became one of the first bonanza farmers. Both Cass County and Casselton are named for him.

James Buchanan was the first sitting U.S. President to visit Dakota Territory because he wanted to see the operation of a bonanza farm.

Idea: Have students read "The Checkered Years: A Bonanza Farm Diary 1884-88" by Mary Dodge Woodward. Students may read sections out loud to the class, as if they're portraying Mary, or assume the roles of others living or working on the farm (blacksmith, horseman, cowhand, kitchen help, farmer, wife, etc.) and write or tell about their responsibilities on the farm. They could write their own diary entries about life on the bonanza farm that could be compiled into a book or use costumes and props when they read from Mary's diary or their own.

Idea: Have students watch Prairie Public's "Bonanza Farms: Prairie Giants of the Northern Plains" (https://www.youtube.com/watch?v=mMCYX9a_b9k) (26 minutes) and write about what life might have been like on a North Dakota bonanza farm.

Answers to Math Challenges

1. $640 \text{ acres/section} \times \frac{1}{4} \text{ section} = 160 \text{ acres}$
2. $40 \text{ bushels per acre} - 12 \text{ bushels per acre} = 28 \text{ bushels per acre} \times 750 \text{ acres} = 21,000 \text{ bushels}$
3. $155 \text{ people} - 7 \text{ people} = 148 \text{ people}$
4. $1,167 \text{ miles} - 216 \text{ miles} = 951 \text{ miles}$
5. $239,250 \text{ people farming in 1900} - 39,200 \text{ people farming in 2024} = 200,050 \text{ more people farming in 1900}$
6. $11 \text{ hours/day} \times 5 \text{ acres/hour} = 55 \text{ acres}$
7. $11 \text{ hours/day} \times 50 \text{ acres per hour} = 550 \text{ acres}$
8. $550 \text{ acres} - 55 \text{ acres} = 495 \text{ acres}$

King Wheat

Idea: Learn about the six classes of wheat grown in the U.S. and what products each is used for. See www.uswheat.org/working-with-buyers/wheat-classes/.

Idea: North Dakota is still the #1 state for spring wheat production. Ask students about the other agricultural products in which our state ranks #1 in production. See www.nass.usda.gov/Statistics_by_State/North_Dakota/Publications/Economic_Releases/Rank/2023/ND-rank23.pdf.

Idea: Bring samples of some of North Dakota's leading crops, including spring wheat and durum, and help students identify them.

Idea: Make Bread in a Bag. See instructions on page 3 of the Wheat Ag Mag teachers guide at www.ndda.nd.gov/sites/www/files/documents/files/AgMag_Wheat_2023_TG_WEB.pdf.

Dakota Ranching

Idea: Study the history of Medora, North Dakota, from its ranching history to its current tourism. Tour Medora, if possible.

Answers to Dakota Ranching

1. cattle
2. ranches
3. range
4. Roosevelt
5. President
6. refrigerated
7. coldest

The '30s to Today

Idea: Plant soybeans in milk cartons or similar small pots. Provide different amounts of water with some plants receiving very little water to simulate drought. Measure plant growth and discuss the effect of drought on crops.

Idea: We often take electricity for granted (until it goes off), but rural electrification made a huge difference in North Dakota in the 1930s. Discuss with students what children their age did for entertainment before electricity.

Examples of U.S. Farm Productivity

Idea: Have students review the progression of ag technologies then brainstorm what farming might be like in the future. Some of their ideas – such as tractors driving themselves by computer, crops growing hydroponically instead of in soil and sensors telling irrigation equipment to turn on because soil is dry – already are in use.

Idea: Have students learn about Oscar Will, who was North Dakota's pioneer seed man, at <https://northdakotawintershow.com/hof-inductees-indi.php?listid=13>.

North Dakota's Machines of Agriculture

Idea: Have students list agriculture-related jobs in your area.

Idea: Have students research the difference between a threshing machine and a combine.

Answers to tools in order

- 4 small tractor
- 6 drones, satellites and computer software
- 1 scapula hoes and antler rakes
- 3 horse-drawn plow
- 2 walking cultivator
- 5 autosteer four-wheel-drive tractor

More Resources

Curricula

North Dakota Studies for Fourth Grade Students — State Historical Society of North Dakota; including units on Native Americans in North Dakota, Dakota Territory, Lewis and Clark, Railroads, the Homestead Act, Geography, Medora and more; www.ndstudies.gov/gr4/home

National Agriculture in the Classroom — Free lesson plans, virtual field trips, and teacher resources, including a searchable curriculum matrix, from AITC programs across the country; <https://agclassroom.org>

Videos

Western Minnesota Steam Threshers Reunion — PBS Learning Media, <https://az.pbslearningmedia.org/resource/74aa9d7c-b7e6-482a-be7a-0d661f87aa8f/western-minnesota-steam-threshers-reunion-rollag-mn/>

Overland Express Rail — Library of Congress, <https://www.loc.gov/item/00694263/>

The Homestead Act — NBC News Learn, <https://www.youtube.com/watch?v=togDUjZOUtc>

How Farmers Harvested and Threshed Wheat in the 1880s — The Henry Ford, <https://www.youtube.com/watch?v=lcMnldjcX04>

Enjoying the Harvest: The North Dakota Mill — Montana Dept. of Agriculture, https://www.youtube.com/watch?v=Vv7O3rep_9U

How North Dakota Transformed Theodore Roosevelt — Smithsonian Channel, <https://www.youtube.com/watch?v=G57kVRYvdHM>

The Dust Bowl — Reading Through History, <https://www.youtube.com/watch?v=n-rBhbkvtm0>

Sod House — National Park Service, <https://www.nps.gov/media/video/view.htm%3Fid%3D002CBC80-F3B4-A789-COE366103F327EC8>

North Dakota's Agricultural History Ag Mag Standards and Benchmarks

English Language Arts and Literacy Content Standards for Reading Informational/Nonfiction Text

Gr. 3, RI.1 Ask and answer questions to demonstrate understanding of a text (textual evidence), referring explicitly to the text as the basis for the answers.

Gr.3, RI.2 Determine the main idea of a text and recount the key details to explain how they support the main idea.

Gr.3, RI.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Gr.4, RI.1 Refer to details and examples in a text (textual evidence) when explaining what the text says explicitly and when drawing inferences from the text. Summarize the text.

Gr.4, RI.2 Determine the main idea of a text and explain how it is supported by key details.

Gr.4, RI.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Gr.5, RI.1 Quote accurately using textual evidence when explaining what the text says explicitly and when drawing inferences from the text. Summarize the text.

Gr.5, RI.2 Determine two or more main ideas of a text and explain how they are supported by key details.

Gr.5, RI.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

Craft and Structure

Gr.3, RI.4; Gr.4, RI.4; Gr.5, RI.4 Determine the meaning of general academic and domain specific words and phrases in a text relevant to grades 3, 4 and 5 topics or subject areas.

3.F.10 Determine the meaning of multiple-meaning words and phrases, choosing from a range of strategies with carrying texts (e.g., synonyms, antonyms, homophones, homographs).

Continued on page 6.

North Dakota's Agricultural History Ag Mag Standards and Benchmarks – Continued from page 5

North Dakota Social Studies Content Standards National

Economy

Graphic Representations

G.3_5.3 Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places, regions, and their environmental characteristics.

Human and Environmental Interactions

G.3_5.4 Explain how North Dakota regions have been influenced by physical and human characteristics.

G.3_5.5 Compare and contrast the three geographical regions of North Dakota.

Connections, Contributions, Historical Sources, and Evidence

H.3_5.7 Explain cause and effect relationships among historical events in the United States using primary and secondary sources.

H.3_5.8 Explain how individuals contributed to the United States throughout different historical eras using primary and secondary sources.

H.3_5.9 Explain how individuals and groups contributed to North Dakota.

H.3_5.10 Describe the events and developments that led to the statehood of North Dakota.

Reading

3.R.6 Use text features (e.g., glossary, index, sidebars) and previously learned text features (e.g., timeline, maps/legends, graphs/charts, subheadings, table of contents, heading, captions, diagrams, bold/underlined words) to read and understand a text or passage.

3.R.9 Determine the most important points and key details presented in two nonfiction texts on the same topic.

North Dakota Mathematics Content Standards Operations and Algebraic Thinking

3.OA.5 Apply properties of operations as strategies to multiply and divide (without the use of formal terms).

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity.

Number and Operations in Base Ten

4.NBT.5 Using strategies based on place value and the properties of operations, multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers.

5.NBT.5 Fluently multiply multi-digit whole numbers using strategies flexibly, including the standard algorithm.

3.NO.NBT.3 Add & subtract within 1000 using place value strategies, algorithms, and/or the relationship between addition and subtraction.

3.AR.OA.2 Apply the properties of operations to solve multiplication and division equations.

North Dakota Agriculture in the Classroom Activities

This **Ag Mag** is just one of the North Dakota Agriculture in the Classroom Council projects. Each issue of the Ag Mag focuses on an agricultural commodity or topic and includes fun activities, bold graphics, interesting information and challenging problems. Send feedback and suggestions for future Ag Mag issues to:

Becky Koch
NDSU Agriculture Communication
701-866-6162
becky.koch@ndsu.edu

Another council teacher resource is **Project Food, Land & People** (FLP). Using the national FLP curriculum, ND Ag in the Classroom provides 600-level credit workshops for teachers to instruct them in integrating hands-on lessons that promote the development of critical thinking skills so students can better understand the interrelationships among the environment, agriculture and people of the world. Teachers are encouraged to adapt their lessons to include North Dakota products and resources.

Project Food, Land & People's 55 lessons include:

- Amazing Grazing
- Cows or Condos?
- By the Way
- Seed Surprises
- Schoolground Caretakers
- Could It Be Something They Ate?
- What Piece of the Pie?
- and many more.

For information, contact:

Jill Vigesaa
N.D. Farm Bureau Foundation
701-799-5488
jill.vigesaa@gmail.com

The ND Geographic Alliance conducts a two-day **Agricultural Tour for Teachers**. The tour includes farm and field visits, tours of agricultural processing plants to see what happens to products following the farm production cycle, and discussions with people involved in the global marketing of North Dakota farm products.

For information, contact:

Jeffrey Beck
North Dakota Geographic Alliance
701-240-9231
jeff.beck@minot.k12.nd.us

Educators may apply for **mini-grants for up to \$500** for use in programs that promote agricultural literacy. The Agriculture in the Classroom Council, working with the ND FFA Foundation, offers these funds for agriculture-related projects, units and lessons used for school-age children. The mini-grants fund hands-on activities that develop and enrich understanding of agriculture as the source of food and/or fiber in our society. Individuals or groups such as teachers, 4-H leaders, commodity groups and others interested in teaching young people about the importance of North Dakota agriculture are welcome to apply.

Examples of programs that may be funded: farm safety programs, agricultural festivals, an elementary classroom visiting a nearby farm and ag career awareness day. Grant funds can be used for printing, curriculum, guest speakers, materials, food, supplies, etc. More ideas and an application are at www.ndffaoundation.com/applications.

For information, contact:

Kayla Hart
North Dakota FFA Foundation
701-224-8390 or 701-399-9563
khart@ndffaoundation.com

North Dakota Agriculture in the Classroom Council

Nancy Jo Bateman

Jackie Buckley — Morton County Commissioner

Don Antram — North Dakota Farm Bureau

Nikki Fideldy-Doll — ND Department of Career and Technical Education

Suzanne Wolf — North Dakota Soybean Council

Steve Snow and **Amanda Olson** — Representing

Kirsten Baesler North Dakota Superintendent of Public Instruction

ND Department of Agriculture Contact
for Ag in the Classroom Council

Heather Lang
ND Department of Agriculture
600 E. Boulevard Avenue, Dept. 602
Bismarck, ND 58505-0020
701-328-2308 or 701-595-9120
hlang@nd.gov

www.ndda.nd.gov/aitc
www.facebook.com/ndaginclassroom



Agriculture Commissioner
Doug Goehring

NDSU

EXTENSION

Ag Mag Production by North Dakota State University Agriculture Communication: Tennille Altepetter, Teacher Reviewer; Becky Koch, Editor; David Haasser, Graphic Designer