

Minnesota Agriculture and Railroads

Purpose: Students will create a map illustrating the location of railroads in Minnesota and their relationship to agriculture processing centers as well as geographic and spatial features of the state. Students will explain the impact of railroads on Minnesota's history and also on agriculture production and processing.

If you use the Northern Lights textbook, this lesson relates to Chapter 10 Sodbusters.

Time: 30 minutes

Level: 6

Materials:

- Marker and/or colored pencils
- Map of Minnesota Railroads
- Map of Meat processing plants in Minnesota
- Map of vegetable canning and freezing sites in Minnesota

All maps can be found on-line or in Minnesota Ag in the Classroom's Food for Thought Curriculum

<http://www.mda.state.mn.us/kids/food4thought.aspx>



Minnesota Social Studies Standards and Benchmarks

- 6.3.1.1.1 Create and use various kinds of maps, including overlaying thematic maps, of places in Minnesota; incorporate the TODALSS map basics, as well as points, lines and colored areas to display spatial information.
- 6.4.4.20.1 Analyze how the rise of big business, the growth of industry and the use of natural resources and technological innovation influenced Minnesota's economy from 1860-1920.

Background

Most of the food we eat travels an average of 1,200-1,500 miles before it arrives on our plate. In Minnesota, we receive goods from all over the country to add to what Minnesota can produce within its borders. This was not always the case. When settlers first arrived in Minnesota they had no easy way to transport the goods and crops they produced. They were also limited to trading with neighbors. Major changes occurred with the arrival of the railroad. Railroads transformed the entire state, especially the western part of Minnesota. From 1860-1880 more than 3000 miles of railroad track were laid. The state's population grew from 172,000 to 780,000. Railroad routes were chosen with consideration given to Minnesota geography, connecting remote areas and the ability to connect with other railroads in other states and Canada.

Railroads had a huge effect on Minnesota agriculture, giving farmers new markets for their crops and allowing for easier and faster transportation. In addition, railroads allowed farmers and settlers to order agricultural supplies and materials (lumber, seeds, fertilizer, and equipment) and have them delivered by the railcars. Additionally, railroads influenced the economy of Minnesota by bringing jobs in the actual construction of the railroads and also in areas such as banking, manufacturing, and mining.

As time progressed, agricultural processing centers were also built. These processing plants are able to use the raw plant and animal products grown and raised by farmers and change them into useable forms to consumers – Example: pork chops, bacon and ham from pigs. In addition, processing plants preserve the food so that it can be eaten safely for a longer period of time – Example: freezing and canning of peas. The location of agricultural processing centers is also closely tied to railroads. Many meat and plant processing facilities are located directly on or in very close proximity to railroads to allow for easy transportation of goods and procurement of natural resources and other inputs necessary for the processing of agriculture products.

Procedure

1. Ask students:
 1. What do you think the area you live in looked like 150 years ago – when Minnesota was a newly formed state?
 2. What has caused it to change?

2. Inform students that many important events have helped transform Minnesota to its current condition. Today you will be focusing on the building of railroads across Minnesota. ***If you use the Northern Lights textbook, this lesson relates to chapter 10 (specifically pages 146-149).*** Use the Background information with this lesson and the Northern Lights textbook if available to provide a few facts for students, such as:
 1. From 1860-1880 more than 3000 miles of railroad track were laid
 2. The state's population grew from 172,000 to 780,000.
 3. Railroad routes were chosen with consideration given to Minnesota geography, connecting remote areas and the ability to connect with railroads in other states and Canada.
3. Give each student a copy of Map 31: Railroads in Minnesota – found in the Food for Thought Curriculum guide or at <http://www.mda.state.mn.us/kids/food4thought.aspx>
You can also use the digital maps on the website to project the map onto a SMARTboard or screen. Have students share ideas about why railroads were constructed in the locations on the map. If using a whiteboard or smartboard, layer several different maps with the railroad map (suggestions – water features, Minnesota native vegetation, Landforms of Minnesota) and have student analyze if these natural resources of Minnesota affected where railroads were built.
4. Ask students to again think back to the time period of 1860-1880. Ask students:
 1. What benefits did the railroad offer to Minnesota settlers? (*Faster travel, buy and sell goods with people/businesses from far away, encourage immigration and settlement*)
 2. How did railroads impact early farmers in Minnesota? (*sell their crops to people in other parts of the US and also get supplies and equipment from other areas*)
 3. Do railroads still affect us today? (*Students may not know how to answer! However, our food supply is still tied to railroads and transportation of goods.*)

Tell students that they are going to focus on our food sources – plants and animals. Farmers raise cattle, pigs, sheep, chickens and turkeys as well as fruits and vegetables for us to eat. These items need to be processed so they are useable to us and don't spoil immediately. Cleaning, changing into useful forms, and packaging of animal and plant products is completed at processing plants. Students will add the location of these processing plants to their railroad map.
5. Give each student a copy of Map 23 Vegetable Canning and Freezing Sites in Minnesota from the Food for Thought Curriculum. Instruct students to use a colored pencil/marker and draw a dot or symbol of their choice where each of these processing centers is located in Minnesota. Students must create a legend/key on their map indicating what their dot or symbol means.
6. Give each student a copy of Map 25 Meat Processing Plants in Minnesota from the Food for Thought Curriculum. Once again instruct students to use a colored pencil/marker and draw a dot or symbol of their choice where each processing plan is located. Remind students to add to their legend/key.

7. Once students have added all vegetable freezing and canning sites and meat processing plants have students add any items necessary so that their map includes TODALSS:
 1. Title
 2. Orientation
 3. Date
 4. Author
 5. Legend/key
 6. Source
 7. Scale
 8. Spatial information
8. Place students in groups of 3-4. Have them compare their maps. If there are differences in locations of processing plants, instruct students to check the original maps handed out and make any corrections.
9. In teams, have students discuss the following questions (Handout a discussion guide to each group to record their answers if you would like)
 1. What is the relationship of the location of agriculture processing plants and railroads in Minnesota?
 2. Explain why you think this relationship exists.
 3. What advantages does an agricultural processing plant have if it is located on or near a railroad?
 4. What disadvantages does an agricultural processing plant have if it is located on or near a railroad?
 5. What other factors would influence where a processing plant is built?
 6. How have agriculture and transportation supported each other throughout Minnesota history?
 7. What impacts do you think agriculture and transportation have on our current economy in Minnesota?
10. After all teams have had a chance to discuss the questions, discuss as a whole class. Compare the thoughts of different teams and think about the impact that both agriculture and railroads have had on Minnesota from 1860 to present day.

Additional Activities

Add additional agriculture facilities to the map: Map 24 -Dairy Product Processing Sites in Minnesota, and Map 22 Ethanol Production in Minnesota and see if these also are in close proximity to railroads.

Compare the transportation speed and effectiveness of railroads to other options utilized in Minnesota (trucks, boats, car, etc.). Possibly contact local grocery stores, restaurants or even your school cafeterias to investigate where (location) and how (transportation method) food arrives at this venue.

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651/201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity employer and provider.

Team Discussion Guide

Work as a team to discuss the following questions and summarize your thoughts below.

1. What is the relationship of the location of agriculture processing plants and railroads in Minnesota?
2. Explain why you think this relationship exists.
3. What advantages does an agricultural processing plant have if it is located on or near a railroad?
4. What disadvantages does an agricultural processing plant have if it is located on or near a railroad?
5. What other factors would influence where a processing plant is built?
6. How have agriculture and transportation supported each other throughout Minnesota history?
7. What impacts do you think agriculture and transportation have on our current economy in Minnesota?