

SETTLING THE MAINE WILDERNESS



Moses Greenleaf, Maine's First Mapmaker

LESSON 15 *Natural Resources, Farming & Industry*

SUBJECT

Exploration of Maine's natural resources and industry

STUDENTS WILL

Understand the role of industry in the development of Maine

VOCABULARY industry, natural resources

PREPARATION

1. Read excerpts from *Settling The Maine Wilderness* (attached, pages 51-53, 63-64), and make a copy for each student.
2. Copy the "MAINE-O" sheet for each student.
3. Gather the following materials: dry beans, stickers or another type of marker for "MAINE-O" game.
4. Peruse the following websites for information about Maine agriculture and industry:

Mining

<http://www.maine.gov/doc/nrimc/mgs/explore/mining/minemaine.htm>
<http://www.maine.gov/doc/nrimc/mgs/explore/mining/sites/sept03.htm>

Quarrying

<http://www.maine.gov/doc/nrimc/mgs/explore/mining/quarry.htm>

Farming

<http://www.mainememory.net/bin/Features?fn=272&fmt=list&n=1&supst=Exhibits&mr=all>

Economy

<http://www.factmonster.com/ce6/us/A0859434.html>

<http://www.mainehistory.info/history.html> (Section: Economic Development)

BODY OF LESSON

Activity 1.

Students will use the given websites and any others that they may find, along with the readings from *Settling the Maine Wilderness*, to review former and current industries and agricultural producers in Maine. One website will lead to others, and students should be encouraged to employ online research skills to find information. Students can do general research or work in small groups, focusing on an assigned topic such as farming, fishing, lumbering, or mining. Tell students that they are preparing to play a Bingo-like game to measure what they learn about Maine products and industries. When the research is completed, ask students to share aloud what they have learned, including locations, people, and time periods associated with each product or industry. **(Knowledge, Comprehension)**

Activity 2.

Each student will create a game card by randomly arranging the bold print words or groups of words that the teacher will list on the board on a “MAINE-O” sheet. There are enough words or word groups for 24 squares, with a FREE square in the center.

The teacher or a designated reader will then give the clues (regular print) orally, and students will match the clues to the answers on their card, as in regular “BINGO.” Rules for winning should be reviewed prior to playing, and the game can be adjusted according to available time. Some teachers will opt to play Coverall, while others may play horizontals, vertical, diagonals, or four corners. All answers should be reviewed at the close of the game. **(Comprehension, Application)**

ASSESSMENT

Based on knowledge displayed during class presentations and the “MAINE-O” game.

EXTENSIONS

1. Have students write a letter from the perspective of Moses Greenleaf to the new Maine legislature following statehood in 1820 using the following prompt:

2. Moses believed that better roads and a new railway were crucial for the settlement of interior Maine. Based on what you have read, particularly about how difficult it was for people to make a living in Williamsburg, write a persuasive letter that shows why Moses’ had this idea, especially as it relates to natural resources and the development of industry in Maine. (**Evaluation, Synthesis**)

3. Research how natural resources in your community led to the growth of industries in the 19th century. For example, in North Yarmouth, Maine, the Royal River was used to power gristmills and sawmills and to float logs to the mills. The river also supplied materials for making bricks and produced ice. In addition, the town had large granite deposits that were developed into quarries. (**Synthesis**)

Excerpts from *Settling the Maine Wilderness*

What follows are excerpts from the indicated chapters that describe the events leading to the development of the slate industry near Williamsburg. This reading shows how Greenleaf and others developed a new industry that helped those in Maine's interior make a living.

Excerpts from Chapter 10, "Transportation, Slate, and Reality," pp. 51-53.

The first discovery was made not far from Moses' home in an outcropping on Whetstone Brook. By 1824 he had made a study of the subject and had done enough exploring to guess that the vein was extensive, running east-northeast to west-southwest for a distance of perhaps fifty miles. If this speculation was correct, towns to the east and west of Williamsburg were equally blessed with slate. Two years later there was no doubt. Slate had been found in Dover and in Monson.

Moses put Eben to work getting samples, and together they experimented with splitting and dressing the stone. While in Boston, Moses had an opportunity to compare his slate with domestic and foreign stone and found it to be as good or superior. A professional quarryman agreed that the Williamsburg slate could be worked. Moses filled pages with figures, but no matter how he figured, transportation was the issue—not so much the transportation from Bangor to the Boston market as that from Williamsburg to Bangor.

For three months of the year the roads succumbed to mud. In winter one could count on good sledding with an ox team, but such transportation would cost twelve dollars per ton, which—added to the six dollars per ton expended for quarrying and dressing, plus the two-dollar-a-ton fee for shipping from Bangor—left a very small margin of profit. A cheaper solution was to raft the slate to Bangor. If one were to make

the rafts of logs, which could also be sold, that would help, but there was a problem here. Little pine was left in Williamsburg, and spruce or cedar brought only a small price in Bangor. One would also have to add something for insurance, for rafting was a risky business. Just as Moses had predicted from the very first, the prosperity of Maine's interior depended upon how cheaply one could move both oneself and one's commerce.

There was in Greenleaf's insistence on a better means of transportation a wider aspect that might be more aptly termed *communication*. Without a flow of goods, ideas, and concerns, he was afraid that sectionalism would develop within the state. There was, as he saw, no "common center" but rather a number of isolated centers between which, instead of a healthy competition, there might develop parochial envy and shortsighted greed. To the north was another probability of danger. A vast section of the state was segregated from the rest by a roadless wilderness. Settlers of this area would naturally gravitate to Canada for their needs and trade. The area might well fall into foreign hands if something was not done. By 1829 Moses was wondering if the time was not running out in which the new Maine legislature might wisely act to provide both the funds and the guidance in developing "efficient systems for ulterior improvements."

Among Moses' perennial plans was "a great state road" running from Bangor to the Canadian border. It was not the terminus of this road that seemed to him so important; it was the in-between, the great interior of Maine waiting development and settlement along with the forest, the soil beneath, and below that the mineral ores. In 1816 came his chance to participate in the construction of a part of this road. The General Court appointed Moses and Samuel Redington to complete a road "passable and convenient for carriages" from Bangor to the last range of townships before the unbounded wilderness

began. A man by the name of Bennock had contracted to establish a road from Orono some thirty miles northward; Moses and Redington were to locate and traverse a road from where Bennock had left off, across the Piscataquis, northwest through the towns of Milo, Brownville, and Williamsburg, to connect with the route already blazed to the Canadian border. Once this road had been located, they were to see to its construction. Bennock had received for his part of the construction a grant of eighty-four hundred acres of public lands. Where the road ran through townships already sold, the cost of building would fall upon the proprietors, who could offer land, as Moses did in Williamsburg, in payment to the contractors, or pay in cash, just as they chose.

On May 1, 1816, Moses and Redington commenced their location and traverse. They completed the job in twenty-three days at a total cost to the commonwealth of \$173.20. Their road ended at the north line of Township Number Six in the Ninth Range (Katahdin Iron Works Township), which had particular interest for both men. Redington had just bought a large section of land in the northern half of this township, so his interest was both immediate and apparent. For Moses the township was a central location from which roads might radiate into a vast area of rivers, woods, and lakes, but there was another feature of even greater possibility. Near the center of this township was a mountain whose brook beds were stained red. As one followed the brooks upward, the color became brighter until one came to its source—a bed of vermilion iron ore. Moses made no special claim to the discovery of this deposit, but certainly he was the first White man to make a serious investigation. The Indians had long known of this iron ocher. They called the source *mun'olam'mon-ungun*, place where abundant, fine paint is found. It was this Indian name that first aroused Moses' curiosity and sent him in search

of the ore. He had melted a sample and forged from the iron a horseshoe as a positive proof for any doubting legislator who felt interior Maine held no treasures.

Now there was a road. It was not convenient for carriages in all seasons nor at any time of year in some places, but it was a road all the same from Bangor to the foot of Ore Mountain in Township Number Six and the wilderness beyond. By 1830, however, Moses' enthusiasm had moved to a more promising mode of conveyance—railroads.

Greenleaf had no problem in communicating his enthusiasm for a railroad to his neighbors in Williamsburg or to businessmen in Bangor. In November 1832 a petition signed by forty-eight prominent men and not-so-prominent farmers, storekeepers, and citizens was sent to the legislature, which on February 8, 1833, acted to incorporate the Bangor and Piscataquis Canal and Railroad Company. Moses was elected president; Francis Brown of Brownville, vice president; Eben Greenleaf, secretary; and Joseph Lee of Milo, treasurer. In April the company held its first meeting, at Moses' house. The charter granted the new company extensive privileges to build either a continuous railway or an interconnected system of canals and rails from tidewater at Bangor to the "slate deposits in the town of Williamsburg" and beyond; to build locks, dams, and viaducts; and to establish side branches to any towns on the Piscataquis, Sebec, or Pleasant Rivers. If the funds could be raised, the transportation problems of Williamsburg and the countryside around would be solved either by canal barges or the puffing of one of those little English engines whistling and ringing its bell up and down the valleys.

Moses wrote to Benjamin Dodd with renewed excitement. He figured that the railroad could be built for fifteen hundred dollars per mile. Of course, a few miles would cost twice that much where special structures were required. The whole road would cost

\$150,000. With the lumber and slate, the railroad should be a sound investment. He pointed out one additional fact. The charter gave the Bangor and Piscataquis Canal and Railroad the right to tap nearly half the state for revenues.

Thirty years later Adams H. Merrill, who had married Eben Greenleaf's daughter and who successfully operated a slate quarry just south of Moses' home, was still trying to get a railroad to Williamsburg and Brownville. Had Moses lived, his railroad company might have prospered with him, but as it was the Civil War had come and gone before steam could be heard working up and down the Piscataquis Valley.

Excerpts from Chapter 12, "Of Heirs and Ironies," pp. 63-64.

From pp. 63-64

As the Greenleafs were leaving Williamsburg, the first development of the slate industry, in which Moses had placed so much hope, was taking place. The developers were Welshmen, a race of slaters, who knew not only their stone but how to quarry it as well. Among them were two brothers, Benjamin and William Williams. These two men, along with William Hughes, began operating a quarry in sight of the Greenleaf homestead but just over the Brownville town line. Benjamin Williams bought Moses Greenleaf's place in 1848. In the spring of 1852 Adams H. Merrill, who had married Captain Eben's golden-haired daughter Persis, moved his family back to Williamsburg, retrieved the homestead, and bought out the slating business on the west side of the Pleasant River.

Once again there was a man of many plans and untiring drive on Greenleaf Hill. Both Adams H. Merrill and Moses Greenleaf were self-made men, but the personalities

they had forged were quite different. Merrill was an autocrat who kept his many sons in debt to the company store. He commanded respect but not always love—even from the members of his own family. Yet stern as he appears to have been, the letters he wrote when away from home show tenderness and the concern of a father. It took such a man as Adams H. Merrill to make a go of the slating business. He left to his sons a small dominion: two thousand acres of timberland, nine dwelling houses, and two quarries, the largest of which employed eighty men, shipped up to thirty thousand squares of slate annually, and in 1876 took the medal for the finest quality of roofing stone at the Philadelphia Exhibition.

“MAINE-O” Game

Words to be filled in randomly on each student’s MAINE-O sheet (24 total):
Center square is FREE!

Fishing

Lumber

Slate

Papermaking, Lumber and Wood products

Ice harvesting

Lobster

Moses Greenleaf

Ezekial Holmes

Animal feed and Vodka

Blueberries

Canning

Beans and corn and squash

Potatoes

Apples

Poultry

Shoemaking

Granite

Limestone

Transportation

Sardine packing

Rail car wheels

Sawdust

Textiles

Shipbuilding and lumber

Questions and Answers for “Maine-O” (answers from the websites indicated)

This natural resource is used for monuments, roads, and the construction of public buildings. It is found in the Penobscot Bay region and in Hallowell. **Granite**

During the winter this industry employed thousands of Maine men and their teams of horses. The industry also gave work to a large fleet of schooners in the 1800s. **Ice harvesting**

This Maine resource was used by the British Navy in the 18th century. **Lumber**

Before Europeans began farming here, Maine Indians grew these crops. **Beans, squash, and corn**

This was Maine’s first industry. **Fishing**

This is Maine’s largest agricultural crop. **Potatoes**

Despite child labor laws, Maine children under the age of 14 were permitted to work in this industry. They were paid by piecework, the job was seasonal, and daily pay tickets could be redeemed at the local candy counter! **Sardine packing**

This Maine industry has been declining for years. The first factories often distributed the product “parts” to farm families so they could make the finished product and earn extra money. **Shoemaking**

The Katahdin Iron Works was a prosperous industry in the mid-1800s. It was a large and thriving operation that produced “pig iron” which was used to make cast iron. The primary use for the cast iron from KIW was to make this product. **Rail car wheels**

This was the greatest challenge facing the slate industry in Williamsburg, and the prosperity of inland regions depended on it. **Transportation**

The staples of Maine industry in the 1800s. **Shipbuilding and lumber**

The staples of Maine industry today. **Wood related industries: papermaking, lumber, and wood products**

In 1882 a rake made this crop much more harvestable. Maine produces 98% of the product consumed in the United States. **Blueberries**

This industry was once central to the economy of many small Maine towns, and employed thousands of men, women, and children every autumn. The industry slowed during the Great Depression, and had nearly vanished by the late 1960s. The Wilson brothers of Portland were among the industry's pioneers, in Maine and the nation.

Canning

This was considered “poverty food” during Colonial times, Maine Indians used it to fertilize their fields, and early indentured servants in Maine went on strike to protest eating so much of it. **Lobster**

A candidate for Governor in 1853, this person is considered the “father of Maine agriculture.” **Ezekiel Holmes**

This person understood the promise of the interior regions of Maine, and believed that investing in roads and education was important to the future of the state. **Moses Greenleaf**

The heyday for this industry was in the mid-1800s. the crop was packed in barrels and transported by horse and wagon to coastal towns, then shipped to cities along the Eastern seaboard, New Orleans, and even to England. **Apples**

This industry spread from Massachusetts to Maine, fueled by the introduction of the power loom. **Textiles**

These are by-products of potatoes. **Animal feed and vodka**

Prior to refrigeration, shipping fish and produce required ice and this wood product. **Sawdust**

A natural resource that was quarried and developed into an industry in Williamsburg.

Slate

After an exhibition in Boston in 1849, this product skyrocketed in popularity. After World War II, the business was improved and industrialized. Today it is experiencing a small-scale revival as a backyard venture for many Mainers. **Poultry**

In the late 1800s Rockland, Maine produced more than one million barrels of this product used for mortar and other building purposes. **Limestone**

MAINE-O
