

# ***Settle Down! A History of New York's Pioneering Settlers***

## **Math Unit**

(Grades 3-5)

### **Teacher's Guide**

#### **Concept:**

In a videoconference program with educators at the New York State Historical Association, students will learn about the lives of Central New York's pioneering settlers. How would you make money and what would you spend it on if you were a pioneer? Students use primary sources from 1790 and their basic math skills to investigate the economy of pioneer life in this hour-long program.

#### **Objectives:**

Use primary source material to learn about the life of pioneers in the 1790s.  
Encourage students to use critical thinking skills to draw conclusions from historical sources.  
Familiarize the students with charts, tables, and other data that can be used to convey information.  
Use charts, tables, and other data to practice basic math concepts and problems.

#### **Before the Videoconference Program:**

Print out the Videoconference Planning Guide and keep it handy. Be sure to review the "What is a Videoconference?" section with your students before the program.

Videoconferences are most effective when your students have been exposed to the subject ahead of time. To this end, we have prepared a fact sheet and a list of essential vocabulary (see below) to help guide your pre-visit lessons. Please prepare students for the program's historical context by reviewing the fact sheet of this packet. Attention should be given to the three natural features that pioneers were looking for, as well as the physical hurdles they had to overcome. Also, please familiarize students with the role of the general store in pioneer life.

Make one copy of pages 1-2 for each student, which will be passed out during a designated time during the program. Pass out the History Detective notebooks before the program begins.

Students can be seated in any arrangement, but they should have a pencil and a hard surface for writing.

#### **Background Information:**

##### **Pioneer Life Fact Sheet:**

After the Revolutionary War, the thirteen new American states were becoming very crowded. Land was expensive and farms were small. Many Americans looked to the western frontier for cheap land and a new life.

At this time the frontier was actually Central and Western New York State! The land was very mountainous, and covered in a thick forest of trees.

Pioneers from Connecticut, Massachusetts, Pennsylvania, and other new states packed up their belongings to move to the wilderness of Central and Western New York.

In selecting land to move to, pioneers looked for three natural features: **good land, water, and trees**. It was important to the pioneer's survival that he found all three where he chose to settle. They were all important for many reasons.

**Land:** A lot of land in the hills of New York is filled with rocks and poor soil that make crops hard to grow. A pioneer had to be careful about where he chose his land. Land was important for:

Providing place to build a house and farm buildings.

Planting crops.

Grazing animals.

**Water:** A water source on or near the land was very important. Lakes, rivers, streams, and natural springs were all good sources of water for the pioneer family. Water was important for:

Survival. People and animals need water to live.

Plants and crops. They need water to grow.

Cooking.

Bathing.

Transporting farm goods to the market.

**Trees:** Trees were important for:

Giving food such as fruit, nuts, and maple sugar and syrup.

Providing shade.

Building houses and furniture.

Building fires to cook food and stay warm in the winter.

In 1786 William Cooper, a pioneer from Pennsylvania, bought thousands of miles of land in the center of New York State. He was one of the first people to try to get pioneers to come to Central New York.

Cooper broke up his land into small farms and sold them to pioneer families from Connecticut, Vermont, and Massachusetts.

Cooper also decided to build a village at the foot of the Otsego Lake. He called his village Cooperstown.

Early travel to Cooperstown was difficult because there weren't many roads or bridges. Many pioneers who left their family farms in Connecticut or Massachusetts never saw their families again because the travel was too long and hard. Once they reached their new land, pioneers were very isolated from the rest of the country.

The pioneer and his family could not bring many belongings with them, and what they did bring had to be important for survival. They usually only had a few clothes, small amounts of food, an axe and other small tools, a team of oxen, and an ox cart.

A pioneer had a busy job on his new land. He had to cut down trees to make a place to build his house, which was made out of logs from the cut trees.

Cutting down trees to make way for farmland was hard and long work. Oftentimes the pioneer didn't have enough free space to plant his crops until a few years after he arrived.

Many early settlers would make maple syrup and sugar from the trees because they could sell them for money while they were making space for farming. Also, a pioneer could sell the wood from the trees he cut.

In order to sell his wood and sugar, the pioneer needed someone to buy them. If he was lucky, the pioneer lived near a village with a general store that would buy his goods.

### **General Store Fact Sheet:**

In 1790 William Cooper opened a general store in Cooperstown. He had his friend, Richard R. Smith, run the store and work with the pioneers.

The general store was very important to the settlers because it provided many items they needed to sur-

vive, like grain, salt, and other food, as well as fabric for clothing. Pioneers could also purchase fancy items like ceramic teapots and ready-made clothes.

Buying items at a general store worked very different in the 1790s than it does today. Paper money was very rare, if it existed at all. The general store in Cooperstown used the English form of money, which was made up of pounds, shillings, and pence.

Pounds were like dollars, and shillings and pence were like coins. It took 12 pence to make 1 shilling, and 20 shillings to make 1 pound.

Most pioneers were so poor that they usually didn't have coin money. Instead, they bought items at the general store on credit. In other words, they bought things on the I.O.U. system. The pioneers would take what they needed, and promised to pay for it later when they made enough money.

Most of the time pioneers paid for their purchases with other things that were valuable. It worked like a trade. Items such as maple sugar and syrup, wood, and farm crops worked like money in early pioneer villages, and the pioneers used them to pay their bills instead of actual coin money.

In Cooperstown, as well as in pioneer villages all over the United States, the general store was more than just a store. It was a place to meet friends, talk about the news, and get mail. It also served as a bank. It was the center of a pioneer's life, and made living in the wilderness much more bearable.

### **Key Vocabulary:**

**Revolutionary War:** *n.* the war between the American colonies and Great Britain (1775-1783), which ended with the creation of the independent United States.

**Frontier:** *n.* an area just beyond, or at the edge of, a settled area.

**Pioneer:** *n.* a person who ventures into unknown or new territory to settle.

**William Cooper:** *n.* the pioneer from Pennsylvania who first settled in Cooperstown, NY. He bought a lot of land, which he broke up into many farms. He then sold the farms to other pioneers.

**Cooperstown:** *n.* the rural village that William Cooper created for his pioneer settlers. It was where Cooper built the first general store.

**Richard Smith:** *n.* the young man William Cooper hired to run his general store for him.

**General Store:** *n.* a store created in a new settlement that was usually filled with a many different items, including farm tools, food, kitchen and household items, and cloth and sewing supplies.

**Maple sugar:** *n.* a sugar made by boiling down the sap from the maple tree.

**Account book:** *n.* a book where a store keeper logs his customer's purchases. It includes items taken on credit, or paid with money.

**Pounds, shillings, and pence:** *n.* a type of money that is used in England. It was also used in America when it was an English colony, and for several years after the United States was created. The pound is like an American dollar, and shillings and pence are like American coins. Like American coins, shillings and pence can add up to equal 1 pound. For example, 12 pence = 1 shilling; 20 shillings = 1 pound. While the symbol for the American dollar is "\$," the symbol for a pound is "£."

**Credit:** *n.* a formal way of borrowing, where a store keeper allowed a person to take something without paying for it. Instead, the store keeper made a note of how much the item cost. The buyer then paid for the item at another time, either with money or with another item that costs the same amount.

### **Summary of the Program:**

Students will be welcomed by a museum educator. He or she will review the information from the background section, and introduce some additional information about William Cooper and Cooperstown.

Students will then meet a costumed interpreter playing the role of Mr. Smith, the young man William

Cooper hired to run his general store. Mr. Smith will address the differences between pioneer stores and stores of today.

Together, the educator and Mr. Smith will introduce the students to the general store's account book. They will explain its purpose as a record of sales, and explain that it is a great source for learning about pioneer life.

The educator will invite students to become history detectives. He or she will ask the teacher to pass out the copies of handouts 1-2. Mr. Smith and the educator will work with the students to complete various math money problems based on the maple sugar sales of real-life Cooperstown pioneer John Nicholls. Students will then use their knowledge of pioneer life as well as a general store merchandise list to predict the items John Nicholls purchased at the general store. Afterwards, Mr. Smith will share the list of John Nicholls actual purchases, and the students will discuss similarities and differences between their predictions and the truth. The program will conclude with a few additional math problems based on Mr. Nicholls purchases and Mr. Smith's account book.

A brief question and answer session will follow. The educator and Mr. Smith will then conclude the program.

### **After the Videoconference Program:**

Due to time constraints, the program ends before all possible questions and problems have been asked. The potential for learning using the account book material is large. Additional questions and problems are included with the packet if the teacher would like to continue the lesson after the program has ended.

To help students remember and recall key themes and vocabulary from the program, a Pioneer Activity Page has been included with this packet.

### **Additional Follow-up Activities:**

**Investigate your local history:** Visit your library or invite a guest speaker from a local historical museum or association to help the class learn about pioneers in your neighborhood and hometown.

**Create an imaginary General Store:** Have the students think about the items that are important for their survival today. Then create a master list of items they agree would be necessary in a country general store today. Or, if you have a general store in your neighborhood, encourage students to visit with their parents and report back what they found. Discuss why the items in today's general store are different or similar to items in a 1790 General Store.

### **Further Readings:**

Bial, Raymond. *Frontier Settlements*. New York: Children's Press, 2004.

Explains the migration of homesteaders from the east to the west of the Appalachian Mountains. Grades 3-5.

Isaacs, Sally Senzell. *Life on a Pioneer Homestead*. Chicago: Heinemann Library, 2001.

Provides an overview of life on a pioneer homestead including building a home, cooking food, clothing, schools, and everyday activities. Grades 2-4.

Kalman, Bobbie. *Early Stores and Markets*. New York: Crabtree Publishing Co., 1981.

The general store was the center of village life. It served as a community's bank, post office, and place to meet. The book looks at how businesses developed from the early trading post to 17th and 18th century specialty stores. Grade 2-5.

Kalman, Bobbie. *Food for the Settler*. New York: Crabtree Publishing Co., 1992.

Nature's bounty usually provided the settler with everything they needed. Whatever these new farm-

ers didn't know, the Native peoples taught them. The book shows how they caught, grew, and prepared food. Grade 2-5.

Steffoff, Rebecca. *First Frontier*. New York: Benchmark Books, 2001.

Chronicles the exploration and settlement of lands west of the Appalachian Mountains during the late 1700s and early 1800s. Grades 4-7.

Stenson, Elizabeth. *Early Settler Activity Guide*. New York: Crabtree Publishing Co.,

More than 300 stimulating activities and project ideas based on life in early pioneer communities. Activities are designed for individual and group use.

### **New York State Education Standards Addressed:**

#### **Mathematics, Science, and Technology:**

##### **Mathematical Analysis**

- 1.2: Deductive and inductive reasoning are used to reach mathematical conclusions.
- 1.3: Critical thinking skills are used in the solution of mathematical problems

#### **Social Studies:**

##### **History of the United States and New York**

- 1.1 The study of New York State and United States history requires an analysis of the development of American culture, its diversity and multicultural context, and the ways people are unified by many values, practices, and traditions.
- 1.3: Study about the major social, political, economic, cultural, and religious developments in New York State and United States history involves learning about the important roles and contributions of individuals and groups.
- 1.4: The skills of historical analysis include the ability to: explain the significance of historical evidence; weigh the importance, reliability, and validity of evidence; understand the concept of multiple causation; understand the importance of changing and competing interpretations of different historical developments.

#### **Economics**

- 4.1: The study of economics requires an understanding of major economic concepts and systems, the principles of economic decision making, and the interdependence of economies and economic systems throughout the world.



## Maple Sugar Math!



Pioneer Stephen Smith made 2,144 pounds of maple sugar in 1790. He took it to William Cooper's General Store to sell it for money.

If the William Cooper gave him 6 pence for every pound of sugar, how many pence did Stephen Smith receive?  
**2,144 X 6 = 12,864**

If Stephen then used those pence to purchase:

- 1/2 dozen teaspoons (12 pence)
- 1 pen knife (15 pence)
- 1 pair of shoes (108 pence)
- 11 yards of fabric (264 pence)
- 1 pound of tea (39 pence)
- 1 cow bell (144 pence)

How many pence does he have left? **12,854 - 582 = 12,282**

Using the pence he has left, can you convert it into pounds, shillings, and pence, if 12 pence = 1 shilling and 20 shillings = 1 pound?

**12,282 / 12 = 1,023, remainder 8 = 1,023 shillings and 8 pence.**

**1,023 / 20 = 51, remainder 3 = 51 pounds and 3 shillings**  
**Total = 51 pounds, 3 shillings, 8 pence**



**What doesn't belong in a General Store?**  
 Take a look at the list below. Circle the items you think would **not** have been for sale in a pioneer store.



|            |       |             |              |                    |
|------------|-------|-------------|--------------|--------------------|
| Ice cream  | Corn  | Cow Bells   | Iron Kettles | Shoes              |
| Fabric     | Axe   | Chocolate   | Salt         | Potato Chips       |
| Blue Jeans | Paper | Nails       | Toilet Paper | Teapot             |
| Combs      | Socks | Bubble Bath | Seeds        | Thread and Needles |

## Fit the words into the puzzle!

|       |         |              |
|-------|---------|--------------|
| Axe   | Pounds  | Frontier     |
| Land  | Pence   | Richard      |
| Trees | Pioneer | Cooperstown  |
| Lake  | Nails   | Account Book |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | A | P | L | E | S | U | G | A | R |   |   |   |   |   |   |
|   |   | I |   |   |   |   |   | C |   |   |   |   |   |   |   |
|   |   | O |   |   |   | R | I | C | H | A | R | D |   |   |   |
| L | A | N | D |   |   |   |   | O |   |   |   |   |   |   |   |
|   |   | E |   |   |   |   |   | P | O | U | N | D | S |   |   |
|   |   | E |   |   |   |   |   | N |   |   |   |   |   |   |   |
|   |   | R |   |   |   |   |   | F | R | O | N | T | I | E | R |
|   |   |   |   |   |   |   |   | B |   |   |   |   |   |   |   |
| C | O | O | P | E | R | S | T | O | W | N |   |   |   |   |   |
|   |   |   |   | E |   |   |   | O |   | A | X | E |   |   |   |
|   |   |   |   | N |   |   |   | K |   | I |   |   |   |   |   |
|   |   |   |   | C |   |   |   |   |   | L |   |   |   |   |   |
| L | A | K | E |   |   |   |   |   |   | T | R | E | E | S |   |

**Pioneer Word Search!**  
 Look in the grid below to find many of the words we learned today!

|                   |          |         |               |
|-------------------|----------|---------|---------------|
| Revolutionary War | Frontier | Pioneer | Account Book  |
| William Cooper    | Pound    | Credit  | General Store |
| Richard Smith     | Shilling | Pence   | Maple Sugar   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | A | N | K | E | R | O | T | S | L | A | R | E | N | E | G | T | B | L | H |   |
| V | B | F | G | Y | H | D | A | K | U | E | N | W | S | O | M | C | J | P | E |   |
| A | S | C | R | E | D | I | T | F | E | D | H | C | T | O | L | W | U | B | G |   |
| H | W | T | P | O | M | B | E | N | J | K | S | Y | A | G | N | C | R | Z | F |   |
| O | M | N | K | A | L | W | O | T | B | F | H | V | F | S | D | A | L | O |   |   |
| T | F | A | S | H | P | I | Y | U | L | R | E | I | J | C | M | W | Y | N |   |   |
| C | L | T | P | N | P | H | A | K | O | S | F | W | L | A | K | Y | J | T |   |   |
| M | I | W | D | L | R | K | H | K | M | S | N | R | N | P | Z | L | O | R | W | M |
| E | R | I | O | N | E | I | P | T | G | T | L | W | K | M | O | I | A | N | B |   |
| C | T | L | V | B | L | S | N | B | C | I | X | O | S | P | H | F | N | E | P |   |
| N | E | L | G | C | F | U | P | A | E | B | T | D | G | M | K | O | G | A | V |   |
| E | S | I | Y | W | D | B | Q | G | M | R | Z | S | I | F | P | R | I | V | P |   |
| P | V | A | I | E | D | O | G | B | A | P | D | R | S | L | N | M | T | C | D |   |
| Y | F | M | O | N | O | N | O | T | N | C | V | R | H | E | M | I | O | Z | S | G |
| P | L | C | U | B | R | G | O | O | P | T | J | P | L | D | M | K | L | O | R |   |
| D | I | O | B | E | H | L | S | R | U | E | D | O | W | P | I | L | O | F | X |   |
| T | P | O | F | A | C | C | O | U | N | T | B | O | K | O | K | N | G | V | I | W |
| M | F | P | D | K | J | E | T | C | V | P | Q | C | E | X | F | L | E | J | T |   |
| O | S | E | G | R | I | C | H | A | R | D | S | M | I | T | H | T | R | N | O |   |
| W | P | R | L | F | T | C | W | N | M | K | A | E | D | Q | L | H | I | B | C |   |





# Acct of Sugar Casks with their Quality

| No. | Quality      | Tare                             | Net Weight                        |
|-----|--------------|----------------------------------|-----------------------------------|
| 1   | good Quality | 53                               | 575                               |
| 2   | ditto        | 57                               | 555                               |
| 3   | Superior     | 60                               | 510                               |
| 4   | ditto        | 52                               | 550                               |
| 5   | good Quality | 56                               | 522                               |
| 6   | ditto        | 60                               | 553                               |
| 7   | ditto        |                                  |                                   |
| 8   | ditto        | 30                               | 510                               |
| 9   | Superior     | 60                               | 534 <sup>10</sup> / <sub>16</sub> |
| 10  | midling      |                                  | 528                               |
| 11  | Superior     | 55 <sup>10</sup> / <sub>16</sub> | 625                               |
| 12  | ditto        | 50                               | 518                               |
| 13  | good         | 30                               | 440 <sup>10</sup> / <sub>16</sub> |
| 14  | ditto        | 50                               | 535 <sup>10</sup> / <sub>16</sub> |
| 15  | Superior     | 55                               | 530 <sup>10</sup> / <sub>16</sub> |
| 16  | good         | 33                               | 578                               |
| 17  | ditto        | 54                               | 518                               |
| 18  | Superior     | 54                               | 523 <sup>10</sup> / <sub>16</sub> |
| 19  | ditto        | 56                               | 532                               |
| 20  | ditto        | 46                               | 515 <sup>10</sup> / <sub>16</sub> |
| 21  | ditto        | 51                               | 573 <sup>10</sup> / <sub>16</sub> |
| 22  | Midling      | 57                               | 573 <sup>10</sup> / <sub>16</sub> |
| 23  | Superior     | 51                               | 543 <sup>10</sup> / <sub>16</sub> |
| 24  | ditto        | 57                               | 558                               |
| 25  | ditto        | 58 <sup>10</sup> / <sub>16</sub> | 541 <sup>10</sup> / <sub>16</sub> |
| 26  | ditto        | 58                               | 490                               |
| 27  | ditto        | 40                               | 515                               |
| 28  | goods        | 52 <sup>10</sup> / <sub>16</sub> | 541 <sup>10</sup> / <sub>16</sub> |
| 29  | Superior     | 52 <sup>10</sup> / <sub>16</sub> | 512                               |
| 30  | goods        | 56                               | 551                               |
| 31  | Irish        | 47                               | 527                               |



**Pioneer Life Maze**  
Work through the maze by answering "true" or "false" to the statements. Correct answers take you to the finish!

**START!**

You spend time tapping trees to make sugar and syrup and cutting others for wood.  
F T

The syrup, sugar, and wood can be sold for money that the pioneer needs.

You choose to settle where there is good land, water, and trees.  
F T

No chainsaw in 1790, sorry! You'd use an axe.

You use a chainsaw to cut down trees to make room for farming.  
F T

Land, water, and trees are all important! Try again.

You sell your sugar and wood to the general store and come in return.  
T F

You use your credit money to buy candy, toys, and bubble bath.  
T F

They didn't use American money. Instead, they would get a credit at the store.

Yep, You'd want tools and fabric to buy useful things like tools and fabric.

Pioneer life was hard work. Try again.

You take your new tools home and continue to make sugar, cut down trees, and farm.  
T F

**FINISH! Congratulations! You would have been a good pioneer!**

### Pioneer Life Maze

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**START!**

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F T

No chainsaw in 1790, sorry! You'd use an axe.

The syrup, sugar, and wood can be sold for money that the pioneer needs.

You use a chainsaw to cut down trees to make room for farming.  
F T

Land, water, and trees are all important! Try again.

You spend time lapping trees to make sugar and syrup and cutting others for wood.  
F T

You sell your sugar and wood to the general store and come in return.  
T F

You use your credit money to buy candy, toys, and bubble bath.  
T F

They didn't use American money. Instead, they would get a credit at the store.

Pioneer life was hard work. Try again.

Yep, You'd want tools and fabric to buy useful things like tools, sugar, and farm.

You take your new tools home and continue to make sugar, cut down trees, and farm.  
T F

**FINISH! Congratulations! You would have been a good pioneer!**