

# Inventors John Deere and Cyrus McCormick

**Grade Level: 4-8**

## Lesson Overview

Students will learn how John Deere and Cyrus McCormick's inventions changed agriculture as they explore their lives and create a timeline of the events pertaining to these two famous inventors.

## Student Objectives

1. Identify the impacts the inventors John Deere and Cyrus McCormick had on farmers and agriculture.
2. Identify the impacts the inventors John Deere and Cyrus McCormick had on the people of the United States and the world.
3. Describe the risks John Deere and Cyrus McCormick took in their businesses.
4. Explain how John Deere and Cyrus McCormick were competitors in their businesses.
5. Answer questions about the life and times of John Deere and Cyrus McCormick.

## Materials

- ✓ John Deere Information Sheet
- ✓ Cyrus McCormick Information Sheet
- ✓ Deere & McCormick Compare and Contrast Worksheet
- ✓ Deere & McCormick Timeline Worksheet

## Vocabulary

- **alloy** - a substance composed of two or more metal(s), with a nonmetal. A less costly metal mixed with a more valuable one.
- **apprentice** - a person who works for another in order to learn a trade.
- **blacksmith** - a person who makes objects of iron.
- **cast iron** - an alloy of iron, carbon, and other elements, cast as soft and strong, or as hard and brittle depending on the mixture and methods of molding.
- **journeyman** - a person who has served an apprenticeship at a trade or handicraft and is certified to work assisting or under another person.
- **patent** - the exclusive right granted by a government to an inventor to manufacture, to use, or to sell an invention for a certain number of years.

- **plow** - an agricultural implement used for cutting, lifting, turning, over and breaking up soil.
- **reaper** - a machine used for cutting the stalks of standing grain or a person who reaps.
- **smithy** - a common name for a blacksmith's workshop.
- **steel** - a generally hard, strong, durable, and malleable alloy of iron, carbon, and other elements.

## Background Information

Background information found on student reading pages.

## Procedure

1. The books *Pioneer Plowmaker: The Story of John Deere* or *John Deere, That's Who!* listed under additional resources can be used as an interest approach to read to the class to start off the lesson or to end the lesson. These books may be available from your IL Agricultural Literacy Coordinator [http://www.agintheclassroom.org/AGLitCoord/Coordinator%20Directory\\_website.pdf](http://www.agintheclassroom.org/AGLitCoord/Coordinator%20Directory_website.pdf).
2. Introduce the students to John Deere and Cyrus McCormick through the information sheets included in this lesson. Pass out copies of these information sheets to every student (students need their own copy for later use) and have them read the sheets individually, in groups, or as a class.
3. Discuss how John Deere and Cyrus McCormick's inventions impacted farmers, agriculture production, and the world by asking the following questions:
  - a. What motivated these men to invent their inventions?
  - b. How did these inventions help farmers?
  - c. How did these inventions help people in the United States and all over the world?
  - d. What risks did John Deere and Cyrus McCormick take in starting their own businesses?
4. After discussing these questions, pass out the Deere & McCormick Compare and Contrast Worksheet and the Deere & McCormick Timeline Worksheet. The students will use the John Deere and Cyrus McCormick information sheets to

answer the questions on the worksheet and complete a timeline of the two men's lives.

5. Finally, revisit the questions from number 2 to complete the lesson or continue on with one or more of the following extension activities.

## Extension Activities

1. Use the websites listed to have students search for more information on the life and times of these two great inventors.
2. Plows and reapers are still in use on farms, but in different forms. Challenge your students to do a history report on the changes in these tools over time.
3. Many other inventors helped shape American agriculture. Have students do reports on other agriculture inventors. Suggested inventors: Joseph Glidden (barbed wire), Eli Whitney (cotton gin), Joseph Dart (the grain elevator), Anna Baldwin (milking machine), and Jethro Tull (seed drill and plow).

## Additional Resources

- Read more about John Deere and Cyrus McCormick and the agriculture impacts of their inventions at your library or on the Internet.
- <https://youtu.be/UxXKqU5TIVI> story of Cyrus McCormick's inventing the reaper.
- <https://youtu.be/VYu-IVTFJOo> story of Cyrus McCormick's life and his inventions
- [https://youtu.be/zuqACE1AG\\_A](https://youtu.be/zuqACE1AG_A) International Harvester promo film of 1937: "The Romance of the Reaper". About 20 minutes long, the story of Cyrus McCormick's invention, his steadfast push to create the machine and how it kept changing until the first combine was made. Elements of the time are historically addressed.
- <https://youtu.be/tmXpmUPFMQ8> Farmer's Almanac TV: John Deere, the Man
- <https://www.deere.com/en/our-company/history/> - John Deere website which includes the story of John Deere.
- <https://www.caseih.com/northamerica/en-us/company/about-case-ih> Case IH history which includes McCormick and International Harvester

Note: these books may be available from your Illinois Agricultural Literacy Coordinator [http://www.agintheclassroom.org/AGLitCoord/Coordinator%20Directory\\_website.pdf](http://www.agintheclassroom.org/AGLitCoord/Coordinator%20Directory_website.pdf).

- *Pioneer Plowmaker: The Story of John Deere* by David R. Collins ISBN 978-0913163320
- *John Deere, That's Who!* by Tracy Nelson Maurer ISBN 978-1627791298

## Standard

### *Illinois Social Science Standard*

SS.H.1.6-8.MdC: Analyze connections among events and developments in broader historical contexts.

The **M**ultidisciplinary **A**gricultural **I**ntegrated **C**urriculum (mAGic) was created in 2004 under the leadership of the Illinois State Board of Education (ISBE) and the Facilitating Coordination in Agricultural Education Project (FCAE). Funding was made available through the FCAE grant budget from the agricultural education line item of the ISBE budget. This revision, as printed, was developed in September 2021.



These mAGic lessons are designed to bring agriculture to life in your classroom. They address the Illinois Learning Standards in math, science, English language arts and social studies.

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## John Deere Information Sheet

John Deere was born on February 7, 1804, to Sally and William Deere of Rutland, Vermont. He was one of five children brought up by his mother after his father was lost at sea. John received only a very simple early education because of his family's lack of money.

In 1821, at the age of 17, he started an apprenticeship to become a blacksmith with Captain Benjamin Lawrence. Lawrence was a highly respected blacksmith who taught John for four years. John was paid \$30 for the first year of his apprenticeship, as well as room and board with a set of clothes.

After John's apprenticeship was over in 1825, he began his career as a journeyman blacksmith and worked doing a variety of blacksmithing jobs: shoeing horses, making pots and pans, crafting hayforks and shovels, as well as manufacturing a wide variety of farm machinery.

He married in 1827 at the age of 23. For almost ten years he worked as a blacksmith in Vermont until fires destroyed his smithy and financial hardship sent him west. He moved, leaving his wife and family behind in Vermont, to work as a blacksmith in Grand Detour, Illinois.

When he arrived in Grand Detour, he rented land and began working within days of his arrival. It did not take long for him to hear from the local farmers about the troubles they were having plowing the thick, sticky, rich soils in the area. The plows they were using were made of cast-iron and were built for use in the light, sandy soils of Vermont. The heavy prairie soil in Illinois stuck to their plows. For the plow to do its job, farmers had to frequently stop to scrape the soil from the plow.

John thought that a highly polished plow with the proper shape would clean itself as the farmer plowed. In 1837, John used a broken steel saw blade to fashion his first plow and tested it on a farm in Grand Detour. John's "self-polishers" were the talk of the agricultural community. In 1838, John was finally financially stable enough to send for his wife and family who then made the six-week trip from Vermont to Grand Detour, Illinois.

Goods and services were provided to consumers a little differently in the 1800s than they are today. At that time, machinery was made by blacksmiths only after customers placed their orders. John Deere went about selling his plows in a much different manner. He made plows before he had orders for them and then took those plows into the country to sell them to farmers. This idea was the start of a manufacturing system we still use today. When John first started, he had neither the facilities nor the financial resources to make more than a few plows in a year, so he had to seek partners for his business. On the frontier, starting a new business was hard work; there were few banks, poor transportation systems, and a limited supply of steel. Consequently, he had to import steel from England.

In 1841, John manufactured 75 plows in Grand Detour. John realized that he needed to be closer to the Mississippi River for transportation and moved his operation to Moline, Illinois. After that move, John Deere and his 16-person workforce built 2,136 plows in 1849. By 1855, the company was producing over 10,000 plows per year.

In January of 1864, John Deere secured his first patent for a “new and useful Improvement in Molds for Casting Steel Plows and other Articles.” He amended the patent in April and received two more patents within the next three years. John’s business was incorporated in 1868 under the name Deere & Company. John Deere died on May 17, 1886. John’s son Charles took over the business and by his death in 1907 the company was manufacturing a wide variety of steel plows, cultivators, corn and cotton planters, and many other implements.

Today, employing more than 69,000 people, John Deere and Company is still one of the most prominent global manufacturers of a wide variety of machinery and equipment.

## **Cyrus McCormick Information Sheet**

Cyrus McCormick was born on February 15, 1809, to Mary Ann and Robert McCormick of Rockbridge, Virginia. He was one of eight children brought up on a working farm and mill. Cyrus received a great start in his mechanical endeavors from his father, who was also an inventor. Cyrus started working in all aspects of the family businesses at an early age.

In 1824, at the age of 15, Cyrus was already working on agricultural inventions and invented a cradle for harvesting grain. Cyrus' father had been working on a horse drawn reaper (a machine for cutting standing grain) since around Cyrus' birth, but had not been able to finish the project. He handed the project over to Cyrus in 1831 and within weeks he had built, field-tested, remodeled, and successfully demonstrated the world's first horse drawn mechanical reaper. Cyrus field tested the reaper in 1831 and after making some changes to his design, patented his reaper in 1834.

For the next twelve years, Cyrus and his family made and sold reapers from their farm in Virginia. During that time, they sold fewer than one hundred machines. Farmers were unconvinced about the usefulness of the machine that some had compared to a flying machine, a wheelbarrow, and even a carriage. However, by 1841, farmers had finally come to realize the greatness of the reaper. In 1847, Cyrus was forced to move his business from his family farm to a factory in Chicago. He called his company McCormick Harvesting Machine Company and brought his brothers William and Leander in as partners. In 1848 his factory made 500 reapers; in 1851 it made 1000; by 1857 it was turning out 23,000; and by 1858 the company was the largest farm equipment maker in the United States with assets over one million dollars.

Cyrus married in 1858 and began to spend more time away from Chicago. He spent a large amount of his time defending his patent rights. In 1871 the Great Chicago Fire destroyed McCormick's factory. He rebuilt in southwest Chicago and called his new factory McCormick Works.

Cyrus Hall McCormick died on May 13, 1884. His son, Cyrus Jr., became president of the company. Throughout the 1880s and 1890s, a period of time known as the "Harvester Wars", the McCormick Harvesting Company was still a leading equipment maker, but was being heavily challenged by several rivals. The company's number one rival was the Deering Harvester Company (not to be confused with John Deere). By 1900, McCormick and Deering were nearly equal in sales.

In 1902, Deering, McCormick, and three other smaller companies merged to form the International Harvester Company. Cyrus McCormick's sons, Cyrus Jr. and Harold Fowler McCormick, presided over the new company for its first 40 years. The company operated as the International Harvester Company until 1985 when they merged with Case to become Case IH. Case IH remains a leading manufacturer of machinery and equipment.

Name \_\_\_\_\_

## Deere & McCormick Compare and Contrast Worksheet

### Directions:

- Read the John Deere and Cyrus McCormick information sheets.
- Answer questions 1-7 and then complete the John Deere & Cyrus McCormick Timeline to mark the years.
- Use the Timeline Worksheet to answer questions 8-11.

1. In what year were these inventors born?

\_\_\_\_\_ John Deere  
\_\_\_\_\_ Cyrus McCormick

2. In what year did these inventors die?

\_\_\_\_\_ John Deere  
\_\_\_\_\_ Cyrus McCormick

3. In what year did these inventors first patent their most famous inventions?

\_\_\_\_\_ John Deere - self-polishing plow  
\_\_\_\_\_ Cyrus McCormick - reaper

4. In what year did these inventors first invent their most famous inventions?

\_\_\_\_\_ John Deere - self-polishing plow  
\_\_\_\_\_ Cyrus McCormick - reaper

5. In what year did these inventors get married?

\_\_\_\_\_ John Deere  
\_\_\_\_\_ Cyrus McCormick

6. In what year did these inventors produce the machinery in the amounts given?

\_\_\_\_\_ John Deere – 2,136 plows  
\_\_\_\_\_ John Deere – 10,000 plows  
\_\_\_\_\_ Cyrus McCormick - 1,000 reapers  
\_\_\_\_\_ Cyrus McCormick - 23,000 reapers

7. In what year did the companies of these inventor's form?

\_\_\_\_\_ John Deere into Deere & Company  
\_\_\_\_\_ Cyrus McCormick into International Harvester Company

8. How old were the inventors when they got married?

\_\_\_\_\_ John Deere  
\_\_\_\_\_ Cyrus McCormick

9. At what age did the inventors complete these inventions?

\_\_\_\_\_ John Deere - self-polishing plow  
\_\_\_\_\_ Cyrus McCormick - reaper



10. How old were the inventors when they received their first patent for these inventions?

\_\_\_\_\_ John Deere - self-polishing plow

\_\_\_\_\_ Cyrus McCormick - reaper

11. How old were the inventors when they died?

\_\_\_\_\_ John Deere

\_\_\_\_\_ Cyrus McCormick

12. What motivated these men to invent these machines?

13. How did these inventions help farmers?

14. How did these inventions help people in the United States and all over the world?

15. What risks did John Deere and Cyrus McCormick take in starting their own businesses?

## Deere & McCormick Compare and Contrast Worksheet ANSWER KEY

### Directions:

- Read the John Deere and Cyrus McCormick information sheets.
- Answer questions 1-7 and then complete the John Deere & Cyrus McCormick Timeline to mark the years.
- Use the Timeline Worksheet to answer questions 8-11.

1. In what year were these inventors born?

1804 John Deere

1809 Cyrus McCormick

2. In what year did these inventors die?

1886 John Deere

1884 Cyrus McCormick

3. In what year did these inventors first patent their most famous inventions?

1864 John Deere - self-polishing plow

1834 Cyrus McCormick - reaper

4. In what year did these inventors first invent their most famous inventions?

1837 John Deere - self-polishing plow

1831 Cyrus McCormick - reaper

5. In what year did these inventors get married?

1827 John Deere

1858 Cyrus McCormick

6. In what year did these inventors produce the machinery in the amounts given?

1849 John Deere – 2,136 plows

1855 John Deere – 10,000 plows

1851 Cyrus McCormick - 1,000 reapers

1857 Cyrus McCormick - 23,000 reapers

7. In what year did the companies of these inventor's form?

1868 John Deere into Deere & Company

1902 Cyrus McCormick into International Harvester Company

8. How old were the inventors when they got married?

23 John Deere

49 Cyrus McCormick

9. At what age did the inventors complete these inventions?

33 John Deere - self-polishing plow

22 Cyrus McCormick - reaper

10. How old were the inventors when they received their first patent for these inventions?

60 John Deere - self-polishing plow

25 Cyrus McCormick - reaper

11. How old were the inventors when they died?

82 John Deere

75 Cyrus McCormick

12. What motivated these men to invent these machines?

**Both were motivated to make farm work easier. John Deere wanted to make a plow that would move through the soil easier. Cyrus McCormick wanted a machine to do work that used to be done by hand.**

13. How did these inventions help farmers?

**The plow and the reaper made farm work easier for farmers. The inventions allowed them to farm more land in less time.**

14. How did these inventions help people in the United States and all over the world?

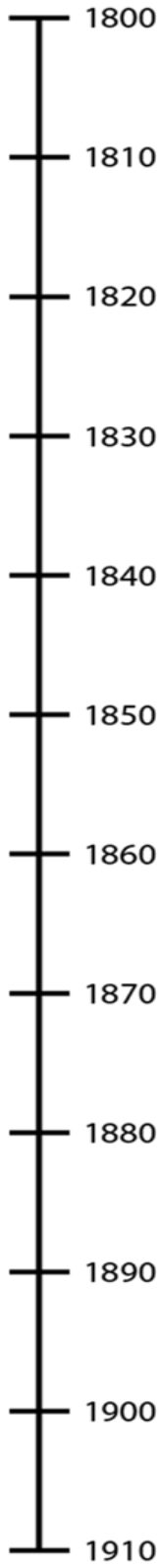
**These inventions allowed farmers to farm more land and thus produce more food for the United States and the world.**

15. What risks did John Deere and Cyrus McCormick take in starting their own businesses?

**They put money and time into making a product without knowing if they would be able to sell them.**

Name \_\_\_\_\_

### Deere & McCormick Timeline Worksheet



1985 -

A callout box containing the text "1985 -" with an arrow pointing to the 1910 mark on the timeline.

# Deere & McCormick Timeline ANSWER KEY

