

Cotton Production and Milling

By S. Konrade

Grade Level: 5-6

Approximate Length of Activity: 45 minutes

Objectives: Discuss an example of cause and effect in US history. Interpret the pattern of settlement/resettlement of the United States.

Introduction: Cotton has a long history from at least 3000 BC. It was known to have been grown by Native Americans in the early 1500s. Coronado spotted it on his expedition in 1540-42. The Spaniards raised a crop in Florida in 1556. The English settlers were provided with cotton seeds from the West Indies in 1621. In 1765 in England, James Hargreaves invented a machine, the spinning jenny, capable of spinning eight to eleven threads at a time. The roller spinning method was also introduced by an Englishman in 1769. This machine pulled and twisted the yarn and wound it on spools in one operation. These two machines accelerated the production of cotton.

Cotton mills, the production of cotton, and the sale of cotton cloth was banned in England and in the American colonies. The wool industry didn't want the competition. The law was repealed in 1736. Exports of cotton mill machinery and technology exports were still banned. Samuel Slater, an English mill worker, immigrated to America and built the first cotton mill from memory. The cotton industry started to grow.

Eli Whitney saw the need for a faster way of removing lint (cotton fibers). In 1793, he built the cotton gin. Now the fibers could be separated and seed removed by a machine instead of by hand. Production increased from one person who could produce one pound a day to the machine that could produce 50. Eli Whitney is often credited with having two major accomplishments that caused the Civil War. First the cotton gin enabled King Cotton and the use of slaves to produce more cotton. Secondly, the use of machines and interchangeable parts would industrialize the North and divide it from the South.

Harvesting the cotton by hand limited productivity. An experienced cotton picker could pick 450 pounds of cotton a day. This cotton includes the seeds. Many other devices were developed, but none that could fully replace the manual picking until 1930 with the development of a single row mechanical cotton picker.

The cotton belt, or areas that will grow cotton, are states generally south of Kansas from coast to coast. Some southern counties of Kansas can grow cotton. The plant will flower in 8-10 weeks. The flower is said to be attractive. This flower will pollinate itself then die to expose a small boll. The boll is a segmented pod that contains 30 immature seeds from which the cotton fibers will grow. A cotton plant may have as many as 100 bolls. Each boll may contain 500,000 fibers. When the boll splits it is mature. It takes approximately 25 weeks for cotton to reach maturity for harvest.

Boll weevils were a detriment to the cotton crops. They have since been eradicated.

Once the lint is removed using gins, similar to Eli Whitney's original, the cotton is baled and shipped to the mill. Carding is the process of pulling fibers into parallel webs. These slivers are put into a combining machine and smaller fibers are removed. The slivers are twisted and wound onto bobbins. After it is wound it is called roving and it ready for spinning. Yarn is manufactured by spinning and twisting the roving onto cheese cones. The yarn is ready for the weaving process. The lengthwise threads are known as warp. They are sized with a starch compound. It is placed on a loom. The weft is the yarn that runs crosswise.

Further information on Eli Whitney can be found at
www.geocities.com/Heartland/Point/3048/bio/WHITNEY/eliwhitney.html

Further information on the cotton gin can be found at
<http://taleshomeplace.com/race.htm>
<http://www.kudcom.com/www/hpage10.html>

Further information on cotton can be found at
<http://www.cotton.org>

Background Information

Teaching the Civil War is difficult without an explanation of the importance of cotton and the technology that was developed to make the production easier. I want my students to see hands-on how difficult it was to separate cotton from seed.

Teacher List/Materials

- Purchase cotton in the boll. Possible contact is: The Alaca Company. PO Box 55, Tranquility, CA, 93668. Fax (209) 698-5190. You can also check with a COOP or farmer. The Fredonia COOP was mentioned as a source to me. Also, contact the K-State agronomy department for their ties to southern Kansas farmers who may be cooperative. A southern county extension office may be useful as well.

Introduction Activity to Cotton

Organize a hand-ginning contest among the class. Allow three minutes to separate the seeds from the fibers in a given amount of cotton. Count the seeds and weight the fiber to determine the winner.

Discussion

Why would it be important to produce cotton fibers more quickly? How would technology such as the cotton gin increase slavery in the South? How did the manufacturer of cotton in the North divide the country?

Evaluation of Activity

Did a hands-on project, such as this increase the attention of my students to the relevance of cotton in history?

Essay questions:

1. What did the production of cotton cause to happen in the United States?
2. What did the production of cotton have to do with the settlement of the United States? Evaluate student responses.

Related Activities

Related activities are available at www.africancraft.com/davilojo/ed/lesson/.htm

And <http://member.tripod.com/~KennethBell/Cotton/CottonPlans>

Kenneth E. Bell is also available at P.O. Box 1038, Glen Alpine, NC 28628.

The previously mention Alaca Company sells kits and materials about cotton.