



WNC Historical Association
283 Victoria Rd
Asheville, NC 28801
828-253-9231

Lesson Notebook



Fibers Traveling Trunk

Smith-McDowell House
283 Victoria Rd
Asheville, NC 28801
828-253-9231

A project of the Western North Carolina Historical Association



Dear Teacher,

Thank you for using Smith-McDowell House Museum's **Fibers Travelling Trunk**. This trunk contains lesson plans, worksheets, teaching artifacts, books, and supplemental information relating to the growing, harvesting, and manufacturing of fibers, as well as the social and historical impacts of these products. Feel free to adapt plans and lessons to fit your students' needs. *You know best what will work with your class.*

Before using the trunk, please go over the inventory list and make sure that all the listed items are included. If an item is missing or damaged, please contact the museum as soon as possible to let us know. Please make sure that all items are in the trunk when you return it to the museum. Before returning the trunk, please complete the enclosed evaluation form.

The check-out period for traveling trunks is one week. Please return the trunk promptly, so that other schools may check it out. A late fee will be assessed if the trunk is not returned at the end of the week.

We hope that you and your students enjoy our **Fibers Travelling Trunk**.

Sincerely,

Western NC Historical Association

WNC HISTORICAL ASSOCIATION

Smith-McDowell House Museum • 283 Victoria Road, Asheville, NC 28801
828.253.9231 • wnchistory.org

Fibers Traveling Trunk
Object checklist

Item	OUT	IN	NOTES
Sheep Shears			
Shuttle with thread			
Shuttle without thread			
Weaving heddle			
Flax Hackle			
Two wooden spools			
Spool with thread			
Miniature block of cotton			
Large spool			
Carding paddle			
Spool knitter set			
Weaving loom set			
Skein of spun flax			
Bundle of flax			
3 craft looms			
Bag(s) of Loopers			
Quilt Square			
Bags of Wools:			
Icelandic			
Cotswold (2)			
Jacob sheep			
Dorset horn sheep			
Angora goat			
Cotton bolls			
From Sheep to Sweater (Book)			

The Biography of Cotton (Booklet)			
Kids Weaving (Book)			
Eli Whitney's Cotton Gin (Book)			
Bobbin and Shuttle Magazines (2)			
Working Cotton (Book)			
Weaving Kit			
Notebook of Lessons			

I agree to assume responsibility for the materials in the Traveling Trunk and am liable for any replacement costs of lost or damaged items.

Signature _____

Date: _____

Fibers Traveling Trunk Photo inventory



Sheep Shears
For cutting the wool from the sheep.
Be cautious in handling, these are sharp!



Shuttle with thread
The shuttle is what holds the threads as they go between the warp threads on a loom.



Shuttle without thread



Large Shuttle
This is what carries the yarn through in a large loom. A spool of thread would have been placed in the center section



Heddle: This is the part of a loom that takes the warp threads and allows them to be lifted and lowered to create the over-under process of weaving. This heddle was probably used for making a sort of ribbon or tape and was part of a loom.



Flax Hackle

Flax fibers are inside the flax plant. At this point of the process, the stems of the plant are hit onto the pointy stakes and drawn out, drawing the fibers away from the thicker outside of the stem.

Please handle with caution as they are sharp!



Two wooden spools
Finished yarn would be wound onto spools.



Spool with thread, probably cotton



Miniature Block of Cotton
See "The Story Of Cotton" section in your lessons notebook for more information on this.



Large spool
Probably used in a large weaving machine



Carding paddles
Please be careful with this, it are old AND it are sharp!!
Information about handling cards can be found in the “Carding Wool” section in your notebook



Spool knitter set



My First Weaving Loom Set



Bundle of flax
Please use as display only.



3 Craft Loop Looms
If you'd like to have the students make a potholder or two, you are welcome to use our loops.
If you'd like for each child to make one, please purchase a bag of loopers. They are available at craft stores and at WalMart.



Craft Loops (2 bags)



Hand Stitched quilt square
Please handle carefully.



Bags of different wools. These are unwashed, so you can feel and smell the oily lanolin.
Additional wool like this is available at Earth Guild in Asheville.



Flax seeds

Please handle carefully!!

Some flax seeds grow a type of flax that is specifically for flax fibers. Other types of flax are grown just for their seeds for consumption.



Fine flax, unspun



Drop Spindle Kit with 2 drop spindles

Read the directions included with the kit.

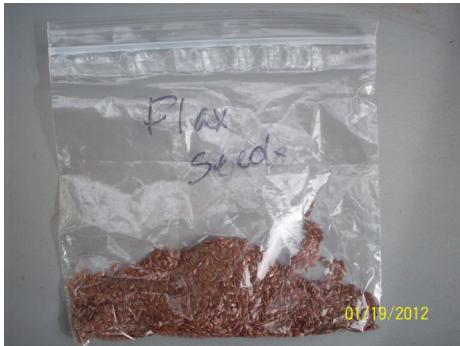
This is not easy, so try it at your own risk!!



Cotton Roving

Roving is the term used for fibers that are ready for spinning.

Roving can be purchased at Michaels for your students' projects like spinning or making felt balls.



Flax Seeds



A skein of flax that has been spun. Please do not untie this.



Cotton Bolls
Handle gently, please.



These two pieces go together and are part of a loom/weaving process, but we are still doing some research as to how this works. The children will see how the little cogs move then you move the handle part through the groove.



We think the horizontal wires are to hold a spool of thread that is threaded up through the hole in the top of the handle.

Lesson 1: What are Textiles?

Objective: Students will understand the historic and modern interactions between people, plants, animals, and technology as they relate to the manufacturing of textiles and clothing.

Overview: As a class or in smaller groups, students will interact with different materials to learn the differences between man-made, plant, and animal fibers. They will look at the process through which each is made and was made in the past, as well as the purposes they serve. This will be a hands-on and visually engaging lesson.

Time: 45 minutes

Grade Level(s): K-5

Relevant State Standards:

K.H.1, K.G.2, K.E.1

1.H.1, 1.G.2

2.G.2

3.G.1.3

4.G.1

Trunk Items/Materials Used:

Ice cubes in zip lock bags (4) (Not Included)

Wool shears

Bags of wool fibers

Wool for carding

Carding paddles

Getting Ready: Arrange needed items on table and clear board. You may wish to distribute paper to each student alternately. Get ice cubes.

Procedure:

1. Using the garments, look at the tags and have students find what material each item is made from.
2. Ask students: Where does wool come from? Where does cotton come from? Where does acrylic come from?
3. Ask which are from animals, from plants, and which are manmade? Are there any mixes?
4. Explain to students that the original Native American inhabitants of North Carolina typically used animal skins to make clothing. When white colonists arrived, there were no manmade fibers so they used animal and plant fibers (along with some animal skins) to make their clothing. Textiles are items made from fibers.
5. Pass around wool, acrylic and cotton socks. Can we separate these into piles? How can you tell the difference?
6. Do the Ice Cube test:
 - Put wool on one hand, cotton or acrylic on the other.
 - Two sealed bags with ice cubes. Put one in each hand.

- Which hand feels cold first, and why?
- 7. Pass around bags of wool fiber. You may smell and touch, but don't pull the fiber out of the bag. A lot of these are unwashed fibers so you can really smell the LANOLIN. Wool has to be washed carefully because it shrinks with hot water and soap.
- 8. Ask students to think about the process by which this was made, beginning with the animal and ending up with a textile. Have them draw the process on the board or on an individual piece of paper.
- 9. Pull out fleece sample. After washing, the fibers must be CARDED to separate the fibers for spinning into yarn. Demonstrate carding technique. Pass around carding paddles?
- 10. Now, when you have carded the wool it is light and fluffy. Pull the fibers apart. See how it separates? But watch what happens when we twist the fibers. Look how strong it is. If you looked at wool through a microscope, you would see that each individual fiber has little 'hooks' on it, so when it rubs against itself, it grabs on and sticks together. Hair does not do this, so that's why we don't spin hair, but other animals fur does so some people use fur from camels, goats (angora), rabbits and others.
- 11. Each child gets a little bit of fleece. Pull it apart until you can see through it. Roll between thumb and index finger and hold it down on your knee. Only roll in one direction, not back and forth. Once you have a little string, fold it in half and let it go. It will roll back on itself (PLYING) and it won't come untwisted.
- 12. Show them the cotton bolls from the box and an item that is made from 100% cotton. Ask students to look at these two items and think of the process through which these fibers were converted into a textile. Have them draw another process chart.

Lesson 2: Harvest and Preparation

Objective: Students will examine the changes in processes over time for making textiles and identify the relationship between people, animals, plants, and technology.

Overview: Students will hear, see, and touch objects and raw materials related to textile production, and watch videos demonstrating different processes. They will compare the process with their own guesses as to how steps of textile production were carried out, and compare these older methods with modern manufacturing.

Time: 45+ minutes

Grade Level(s): K-4, Can be modified for older grades

Relevant State Standards:

K.H.1, K.G.2

1.H.1, 1.G.2, 1.CX.2U

2.G.2, 2.CX.1

4.G.1

Trunk Items/Materials Used:

Shears

Flax Seed

Spun and Loose Flax

Wool bags

Getting Ready:

Find YouTube video of sheep shearing, one of cotton carding, and one of cotton spinning with a drop spindle

Procedure:

1. Following up from the first lesson, have students reflect back to their answers on how they get fibers from plants and animals. The first step is to harvest them. Ask students how wool or fur is harvested from an animal.
2. Show them the shears from the box, then show a [video of sheep shearing](#).
3. Ask students what other animals can be harvested for wool or fur? Answer: almost any. Rabbits, llamas, goats, etc. Also discuss silk, produced by special caterpillars, and extremely prized.
4. Tell students they will now discuss the harvesting of plant fibers. Read to them the **Cotton facts** sheet.
5. Ask students what other plants can be made into fibers? Answer: Bamboo, banana trees, and flax especially.
6. Show them the flax and flax seeds in the trunk. Ask them how it differs from cotton and if it would be comfortable to wear.

7. Discuss with students how settlers in the backcountry and mountains of NC likely traded and purchased fibers or used their own sheep/grown flax
8. Instruct students that they will now move on to preparing the fibers. Search for and show them a [video of carding cotton](#).
9. Have students compare the processes they saw with their original thoughts from the previous lesson. Ask them to explain how each step differed.

Lesson 3: Spinning and Weaving

Objective: Students will understand the relation between technology, the environment, and people in regards to textile manufacture of various forms. Students will understand changes in technology over time.

Overview: Students will interact with and learn about the greater effects of weaving technologies as they changed over time. They will use and compare the advantages/disadvantages of drop spindles, spinning wheels, knitting, and looms. They will also use tactile learning by attempting spinning, knitting, and weaving.

Time: 45+ minutes

Grade Level(s): 3-5, Possible for older grades as well

Relevant State Standards:

3.H.1.3, 3.G.1.3, 3.E.1.2, 3.E.2
4.H.1.3, 4.G.1, 4.E.1, 4.C.1
5.H.2.3, 5.G.1, 5.E.1

Trunk Items/Materials Used:

Drop Spindle
Yarn
Needles
Warp Weaving Kit

Getting Ready: Read resources and further information about fibers and this process. Practice knitting so as to be able to instruct students. Find videos on YouTube and pull them up in advance.

Procedures:

1. After having students [watch and learn about fiber preparation](#), tell them they are now going to learn about the spinning and weaving of the material or textile.
2. Play a [video on spinning with a drop spindle](#). Ask students what are the advantages and disadvantages of this method.
3. Play a [video of spinning yarn on a wheel](#). Ask students what this method improves upon, and what disadvantages it still has.
4. Describe the next step of dyeing, noting the uses of natural dyes including mushrooms, black walnuts, flowers, and roots.
5. Now to the fabric creation. Explain to students the laborious nature of textile and fabric weaving or knitting before the sewing machine, which was not invented until 1846, and only used in factories.
6. On to knitting. Play a [video of knitting with yarn](#).
7. Time for the hands on activity. Instruct students that they will soon make their own textile fabric. Give the yarn and knitting needles to the first student and have them try to follow the first steps of the video. Have each student take over after a few minutes.

8. Discuss with students the limitations of making clothing this way.
9. Introduce them to home looms. Many settlers had floor looms to mechanically weave.
10. Have them watch a video on weaving with a loom. Mount Vernon has a few interesting videos. Discuss with them the improvements in this process and the technology involved. Discuss the changes in society brought about by industrial textiles, especially in the South. Began in 1830s in Lowell Mills in Massachusetts, but cheap labor in the South after the Civil War brought these jobs here. Asheville Cotton Mill, Beacon Mill in Swannanoa, just two massive examples.
11. Discuss the changes from cotton and enslaved labor to textile manufacturing and low-paid label.
12. Have them try their own weaving with the accompanying weaving warp kit (instructions included).

Lesson 4: Eli Whitney and the Cotton Gin

- This lesson was created by the education staff at the National Archives and Records Administration in Washington, DC. Feel free to use the various activity descriptions at your discretion.

Objective: Students will learn about the reasons for the invention of the cotton gin as well as the economic and societal results, intended and unintended. Students will understand the nuances of primary source historical documents.

Overview: Eli Whitney's cotton gin dramatically changed American agriculture as well as the economy and society. By making cotton production quicker and more profitable, it increased demand for the product but also further strengthened the South's dependence on enslaved labor, as well as the North's dependence on the raw materials of that labor. Students will learn about Eli Whitney, the revolutionary mechanical technology he created, and the patent he applied for in order to receive credit and profit. Students will explore the primary source of his patent application struggles and analyze this document. They can complete a range of other activities related to this pivotal invention as well.

Time: 25 minutes – Multiple classes

Grade Level(s): 9-12

Relevant State Standards:

AH1.H.1.2, AH1.H.1.3, AH1.H.1.4, AH1.H.2, AH1.H.3.3, AH1.H.8.1

Trunk Items/Materials Used:

Primary Source Documents

Getting Ready: Pre-read the background materials as well as the primary source. You can print the patent memorial and background information for each student or find this online through the National Archives website. Examine the analysis worksheet at the end and provide copies for each student.

Procedures: *Follow procedures listed toward the end of the lesson*

Teaching With Documents: Eli Whitney's Patent for the Cotton Gin

Background

Eli Whitney and the Need for an Invention

As Eli Whitney left New England and headed South in 1792, he had no idea that within the next seven months he would invent a machine that would profoundly alter the course of American history. A recent graduate of Yale, Whitney had given some thought to becoming a lawyer. But, like many college graduates of today, he had debts to repay first and needed a job. Reluctantly, he left his native Massachusetts to assume the position of private tutor on a plantation in Georgia.

There Whitney quickly learned that Southern planters were in desperate need of a way to make the growing of cotton profitable. Long-staple cotton, which was easy to separate from its seeds, could be grown only along the coast. The one variety that grew inland had sticky green seeds that were time-consuming to pick out of the fluffy white cotton bolls. Whitney was encouraged to find a solution to this problem by his employer, Catherine Greene, whose support, both moral and financial were critical to this effort. At stake was the success of cotton planting throughout the South, especially important at a time when tobacco was declining in profit due to over-supply and soil exhaustion.

Whitney knew that if he could invent such a machine, he could apply to the federal government for a patent. If granted, he would have exclusive rights to his invention for 14 years (today it is 20 years), and he could hope to reap a handsome profit from it.

The Constitution and Patent Law

In [Article I, Section 8, Clause 8](#), the Constitution empowers Congress "To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Patent law must carefully balance the rights of the inventor to profit from his or her invention (through the grant of a temporary monopoly) against the needs of society at large to benefit from new ideas.

The patent bill of 1790 enabled the government to patent "any useful art, manufacture, engine, machine, or device, or any instrument thereon not before known or used." The patent act of 1793 gave the secretary of state the power to issue a patent to anyone who presented working drawings, a written description, a model, and paid an application fee. Over time the requirements and procedures have changed. Today the U.S. Patent and Trademark Office is under the auspices of the Commerce Department.

Eli Whitney Patents His Cotton Gin

In hopes of making a patentable machine, Whitney put aside his plans to study law and instead tinkered throughout the winter and spring in a secret workshop provided by Catherine Greene. Within months he created the cotton gin. A small gin could be hand-cranked; larger versions could be harnessed to a horse or driven by water power. "One man and a horse will do more than fifty men with the old machines," wrote Whitney to his father. . . . "Tis generally said by those who know anything about it, that I shall make a Fortune by it."

But patenting an invention and making a profit from it are two different things. After considering possible options, Whitney and his business partner, Phineas Miller, opted to produce as many gins as possible, install them throughout Georgia and the South, and charge farmers a fee for doing the ginning for them. Their charge was two-fifths of the profit -- paid to them in cotton itself.

And here, all their troubles began. Farmers throughout Georgia resented having to go to Whitney's gins where they had to pay what they regarded as an exorbitant tax. Instead planters began making their own versions of Whitney's gin and claiming they were "new" inventions. Miller brought costly suits against the owners of these pirated versions but because of a loophole in the wording of the 1793 patent act, they were unable to win any suits until 1800, when the law was changed.

Struggling to make a profit and mired in legal battles, the partners finally agreed to license gins at a reasonable price. In 1802 South Carolina agreed to purchase Whitney's patent right for \$50,000 but delayed in paying it. The partners also arranged to sell the patent rights to North Carolina and Tennessee. By the time even the Georgia courts recognized the wrongs done to Whitney, only one year of his patent remained. In 1808 and again in 1812 he humbly petitioned Congress for a renewal of his patent.

The Effects of the Cotton Gin

After the invention of the cotton gin, the yield of raw cotton doubled each decade after 1800. Demand was fueled by other inventions of the Industrial Revolution, such as the machines to spin and weave it and the steamboat to transport it. By midcentury America was growing three-quarters of the world's supply of cotton, most of it shipped to England or New England where it was manufactured into cloth. During this time tobacco fell in value, rice exports at best stayed steady, and sugar began to thrive, but only in Louisiana. At midcentury the South provided three-fifths of America's exports -- most of it in cotton.

However, like many inventors, Whitney (who died in 1825) could not have foreseen the ways in which his invention would change society for the worse. The most significant of these was the growth of slavery. While it was true that the cotton gin reduced the labor of removing seeds, it did not reduce the need for slaves to grow and pick the cotton. In fact, the opposite occurred. Cotton growing became so profitable for the planters that it greatly increased their demand for both land and slave labor. In 1790 there were six slave states; in 1860 there were 15. From 1790 until Congress banned

the importation of slaves from Africa in 1808, Southerners imported 80,000 Africans. By 1860 approximately one in three Southerners was a slave.

Because of the cotton gin, slaves now labored on ever-larger plantations where work was more regimented and relentless. As large plantations spread into the Southwest, the price of slaves and land inhibited the growth of cities and industries. In the 1850s seven-eighths of all immigrants settled in the North, where they found 72% of the nation's manufacturing capacity. The growth of the "peculiar institution" was affecting many aspects of Southern life.

Epilogue

While Eli Whitney is best remembered as the inventor of the cotton gin, it is often forgotten that he was also the father of the mass production method. In 1798 he figured out how to manufacture muskets by machine so that the parts were interchangeable. It was as a manufacturer of muskets that Whitney finally became rich. If his genius led King Cotton to triumph in the South, it also created the technology with which the North won the Civil War.

For Further Reading

Caney, Steven. *Steven Caney's Invention Book*. New York: Workman Publishers, 1985. (Interesting case histories.)

Green, Constance M. *Eli Whitney and the Birth of American Technology*. Reading, MA: Addison Wesley Educational Publishers, 1965. (Still available in paper.)

Mirsky, Jeannette and Allan Nevins. *The World of Eli Whitney*. New York: Macmillan Co., 1952.

Murphy, Jim. *Weird and Wacky Inventions*. New York: Crown Publishers, 1978. (Includes drawings of unusual inventions submitted to the Patent Office with clues to aid the reader in guessing the invention.)

To the Honourable the Senate and House of
Representatives in Congress assembled,

The Memorial of Eli Whitney.

Respectfully sheweth,

That your memorialist is the inventor of
the machine with which the principal part of
the Cotton raised in the United States is cleaned &
prepared for market. — That being in the State
of Georgia in the year 1793, he was informed
by the planters, that the agriculture of that State
was unproductive, especially in the interior, where
it produced little or nothing for exportation. —
That attempts had been made to cultivate
cotton; but that the prospect of success was
not flattering. — Most of the various kinds
which ^{had} been tried in the interior, now of
them were productive, except the Green
seed Cotton, which was so extremely dif-

difficult to clean, as to discourage all further attempts to raise it. — That it was generally believed this species of cotton might be cultivated with great advantage, if any cheap and expeditious method of separating it from its seeds could be discovered — and that such a discovery would be highly beneficial both to the public and the inventor. —

These remarks first drew the attention of your memorialist to this subject and after considerable reflection he became impressed with a belief that this desirable object might be accomplished. —

At the same time he could not but entertain doubts, whether he ought to suffer any prospect of so precarious a nature, as that which depends upon the success of new projects, to divert his attention from a regular profession —

About this time Congress passed a New Patent Law, which your memorialist

considered as a premium offered to any citizen who should devote his attention to useful improvements and as a pledge from his country, that in case he should be successful, his rights and his property would be protected.

Under these impressions your memorialist relinquished every other object of pursuit and devoted his utmost exertions to reduce his invention, which, as yet was little more than a floating image of the mind, to practical use — and fortunately for the Country he succeeded in giving form to the conceptions of his imagination and to matter a new mode of existence — and the result of this new modification of matter, was every thing that could be wished —

After reducing his theory to practice, by effectual & successful experiments your memorialist took out a Patent. —

— So alluring were the advantages developed by this invention, that in a short time the whole attention of the planters of the middle and upper country, of the Southern States, was turned to planting the Green Seed Cotton — The means furnished by this discovery of clearing that species of cotton, were at once so cheap and expeditious, and the prospect of advantage so alluring, that it suddenly became the general crop of the country —

Little or no regard, however, was paid to the claims of your memorialist — and the infringement of his rights became almost as extensive as the cultivation of cotton — He was soon reduced to the disagreeable necessity of resorting to courts of justice for the protection of his property —

After the unavoidable delays which usually attend prosecutions of this kind

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and a laboured trial, it was discovered that the Defendants had only used — and that as the law then stood they must both make and use the Machine, or they could not be liable — the Court decided that it was a fatal, though inadvertent defect in the law and gave judgment for the Defendants. —

It was not until the year 1800, that this defect in the law was amended. —

Immediately after the amendment of the law, your memorialist commenced a number of suits, but so effectual were the means of procrastination and delay, resorted to, by the Defendants, that he was unable to obtain any decision on the merits of his claim until the year 1807 — not until he had been eleven years in the Law & thirteen years of his patent term had expired. —

A compromise has been made with several of the States, to which your memorialist has assigned his right and relinquished all further claim, but from the state in

which he first made and introduced his invention, and which has derived the most signal benefits from it, he has realized nothing — and from no state has he received the amount of half a Cent per pound, on the cotton cleaned with his machine, within that state, in one year.—

Estimating the value of the labour of one man at twenty cents per Day, the whole amount which has been realized by your memorialist for his invention, is not equal to the value of the labour saved in one hour by his machines, now in use, in the U.Sates.—

Permit your memorialist further to remark that by far the greatest part of the cotton raised in the United States has been & must of necessity continue to be the Green Seed. That, before the invention of your memorialist, the value of this species of cotton, after it was cleaned, was not equal to the expence of cleaning it — that since; the cultivation of this species has been a great

source of wealth to the community & of riches to thousands of her citizens — That as a labour-saving machine it is an invention which enables one man to perform in a given time that, which would require a thousand men, without its aid, to perform in the same time. — in short that it furnishes to the whole family of mankind the means of procuring the article of cotton, that important raw material, which constitutes a great part of their clothing at a much cheaper rate —

Your memorialist begs leave further to state that a confident expectation that his case would be embraced in the general law which Congress has, for several years had under consideration, has prevented his making an earlier application. — That the expenses incurred by him in making and introducing this useful improvement and establishing his claim to its invention, have absorbed a great proportion of what he has received, from those States with which he has made a compromise —

That he humbly, conceives himself fairly
intitled to a further remuneration from his
Country — and that he ought to be admitted
to a more liberal participation with his
fellow citizens, in the benefits of his invention —

He therefore prays your Honourable
Body, to take his case into consideration,
and authorize the renewal of his Patent, —
or grant such other relief, as Congress in
their wisdom and their justice may deem
meet, and proper —

Eli Whitney

Washington 16th Apr^c 1812.

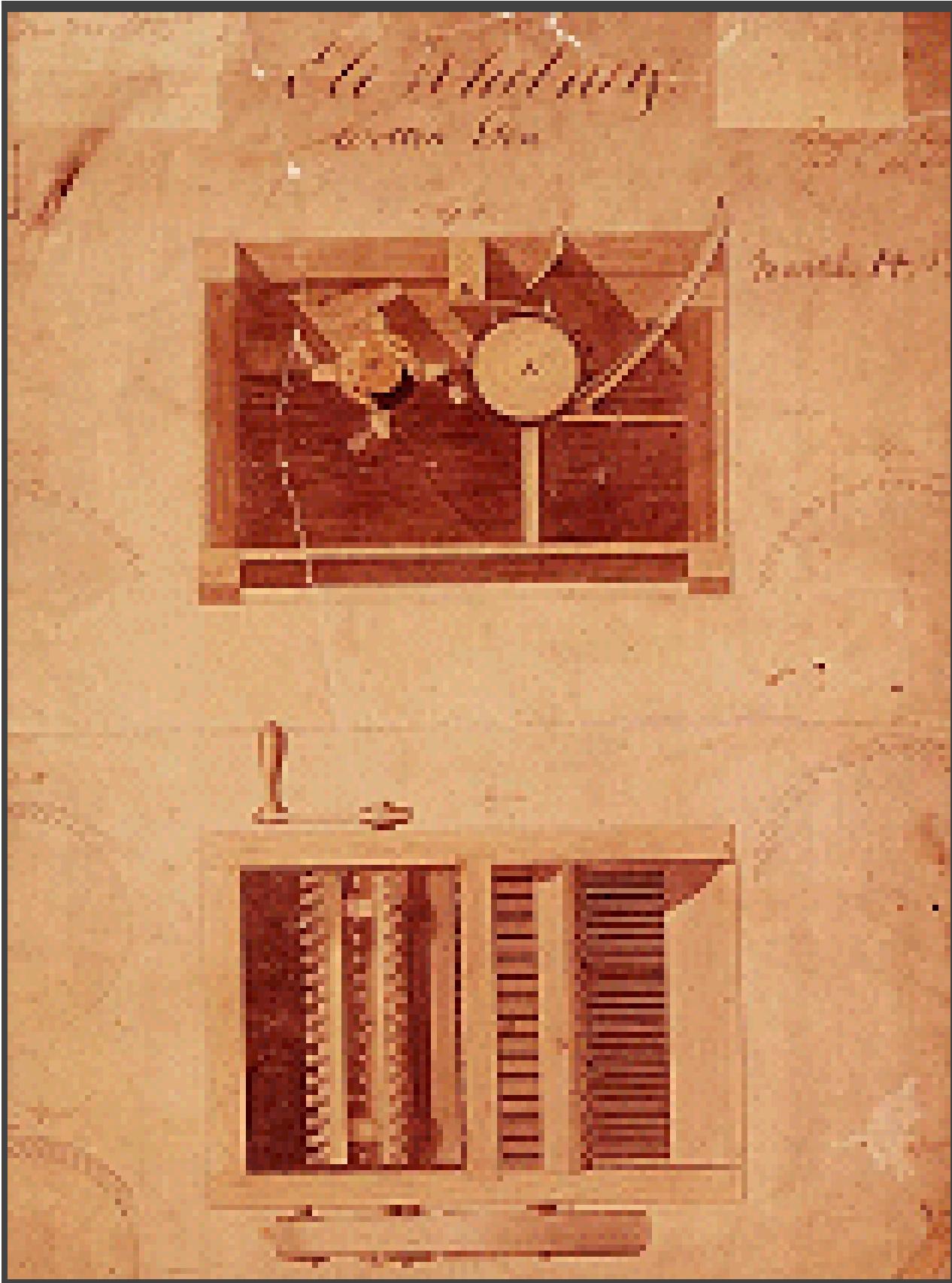
Petition of Eli Whitney.
Presented.

22d Ap^r. 1812.

Re Petⁿ Mr. Sonnider
Mr. P. H. Smith
Mr. Hale & Moore
Mr. Wilson, and
Mr. Gray.

Fuller & Company

Refugee
124 Congress
Vol III, page 183, 1839



Teaching With Documents Lesson Plan: Eli Whitney's Patent for the Cotton Gin

Teaching Activities

Standards Correlations

This lesson correlates to the National History Standards.

- Era 4 -Expansion and Reform (1801-1861)
 - Standard 2D -Demonstrate understanding of the rapid growth of the "peculiar institution" after 1800 and the varied experience of African Americans under slavery.

This lesson correlates to the National Standards for Civics and Government.

- Standard V. B.3. -Evaluate, take and defend positions on issues regarding economic rights.

Constitutional Connection

This lesson relates to the power of Congress to pass laws related to the granting of patents (Article I, Section 8, Clause 8).

Cross-curricular Connections

Share this exercise with your colleagues in history, government, language arts, and science.

Analyzing the Document

1. Ask students to look carefully at the patent drawing of the cotton gin. Ask them to read the following description and identify the parts of the cotton gin mentioned in the quote:

"The cotton gin cranked cotton through rollers with teeth made of wire. The wire teeth tore the green seeds from the cotton. Iron slits let the cotton pass through, but not the seeds. A second rotating cylinder of bristles removed the seedless cotton from the wires. Through a simple arrangement of belts, the same crank turned both the cylinder with wires and another smaller one with bristles."

2. Direct students to analyze Whitney's petition and complete the [Written Document Analysis Worksheet](#). (Students may be surprised to find that Whitney's petition was handwritten. Remind them that the typewriter was not invented until the 1880s.) Lead a class discussion using the following questions: Why was the petition addressed to the Senate and the House? What is a memorialist? Why did Whitney write this in the third person? What promise does he think was made to him by the government in the patent acts it passed under Article I, Section 8, Clause 8? Why does he feel the government has not fulfilled its promise to him? Are you

moved by his plight? Why or why not? Why did Whitney leave out all reference to the growth of slavery in his petition?

3. Because Whitney wrote the argument on his own behalf, the claims he made must be evaluated with caution. Whitney argued that the cotton gin proved to be of major importance to America. Elicit from students the statements Whitney made to support this claim and write them on the chalkboard. Then ask students to compare his claims to the facts presented in the Historical Background section. Ask the students whether they think he exaggerated the cotton gin's importance.

Creative Writing

4. Because slaves were forbidden by law to learn to read or write, we have few written accounts of their lives. However, slaves did sing songs that powerfully expressed their experiences and later became the basis for what we now call the Blues. Direct students to compose a "Cotton Gin Blues" using the call and response form in which the first line is "called" and repeated in the "response" -- AAB, CCD, EEF, etc. The "Saint Louis Blues" is a good example.
Alternatively, ask students to write an interview with a slave on a cotton plantation. Solomon Northup was a New Yorker and a freeman when he was kidnapped and sold as a slave in 1841. His description of the time he spent on a cotton plantation in Louisiana will help students realize the impact made by the cotton gin on the daily lives of slaves:

"The hands are required to be in the cotton field as soon as it is light in the morning, and, with the exception of ten or fifteen minutes, which is given them at noon to swallow their allowance of cold bacon, they are not permitted to be a moment idle until it is too dark to see, and when the moon is full, they often times labor till the middle of the night. They do not dare to stop even at dinner time, nor return to the quarters, however late it be until the order to halt is given by the driver. The day's work over in the field, the baskets are "toted," or in other words, carried to the gin-house, where the cotton is weighed. No matter how fatigued and weary he may be -- no matter how much he longs for sleep and rest -- a slave never approaches the gin-house with his basket of cotton but with fear. If it falls short in weight -- if he has not performed the full task appointed of him, he knows that he must suffer. And if he has exceeded it by ten or twenty pounds, in all probability his master will measure the next day's task accordingly. So, whether he has too little or too much, his approach to the gin-house is always with fear and trembling."

Debate

5. Direct students to read the relevant passages of the following charters: Thomas Jefferson's original draft of the Declaration of Independence, which contains a clause condemning the slave trade; The Northwest Ordinance of 1787, which excluded slavery from the Northwest

Territory; and [Article I, Section 9, Clause 1](#) of the Constitution, which empowers Congress to end the importation of "such persons" after the year 1808. Next, ask students to research the growth of slavery and the market value of cotton following the invention of the cotton gin. Then conduct a class debate on the following statement: Resolved, that without the invention of the cotton gin, slavery would have slowly died out in America.

Role Play

6. Eli Whitney did not win the right to renew his patent, but students will learn a great deal about the patent clause in the Constitution by role-playing his hearing in Congress. After reading the Historical Background section and the [Purpose of Patents article](#), divide students into three teams: Whitney and his lawyers, Southern planters and their lawyers, and congressmen. Set up the room with Whitney and his lawyers on one side, the Southern planters and their lawyers on the other, and the panel of congressmen seated in a row at the front of the room. Begin the hearing by allowing Whitney to state his claim before the congressional panel. Next, allow the Southern planters to state their claims. Finally, allow the members of Congress to ask questions of both sides.

Note: Whitney and his lawyers can argue that the flouting of Whitney's rights by the planters, his legal costs, and the insufficient amounts the planters finally paid relative to how much they profited to prove that his patent should be renewed. "An invention can be so valuable as to be worthless to the inventor," wrote a bitter Whitney. Such outcomes will discourage other inventors whereas the Constitution intended to encourage them. The Southern planters and their lawyers can argue that the planters have already paid Whitney enough through the various legal suits he won and his agreement with the state legislatures. They can try to show that Whitney & Miller, in originally refusing to sell them rights to build their own gins, were trying to set up a monopoly, which would have strangled the fledgling cotton industry. Whitney had his chance to profit from his first patent; it is in the financial well-being of the whole country not to further Whitney's goal to monopolize his invention. The Constitution intended the well-being of the nation to take precedence over that of the individual inventor. Congressmen can pose questions and eventually vote for or against the renewal of Whitney's patent.

Relating the Past to the Present

7. Eli Whitney invented the cotton gin in 1793 as the 18th century turned into the 19th century. As we approach the 21st century, ask students to consider what types of inventions will most affect their lives. The New York Times has a column every Monday in its "Business Day" section describing recently granted patents. Clip this column and discuss with students how some of the new patents may affect their inventors, the companies that will try to market them, and their own lives. Ask students which new inventions may have the potential to harm

as well as help us. (Consider inventions related to genetic engineering , nuclear devises, and computer technology, for example.) The patents listed in this column are identified by patent number and copies are available from the [Patent and Trademark Office](#), Washington, DC, 20231.

The documents included in this project are from Record Group 233, Records of the United States House of Representatives, and Record Group 241, Records of the Patent and Trademark Office. They are available online through the Archival Research Catalog ([ARC](#)) Identifiers:

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305886

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This article was written by Joan Brodsky Schur, a teacher at Village Community School in New York, NY.

Written Document Analysis Worksheet

1.	TYPE OF DOCUMENT (Check one):			
	<input type="checkbox"/> Newspaper <input type="checkbox"/> Letter <input type="checkbox"/> Patent <input type="checkbox"/> Memorandum	<input type="checkbox"/> Map <input type="checkbox"/> Telegram <input type="checkbox"/> Press release <input type="checkbox"/> Report		<input type="checkbox"/> Advertisement <input type="checkbox"/> Congressional record <input type="checkbox"/> Census report <input type="checkbox"/> Other
2.	UNIQUE PHYSICAL QUALITIES OF THE DOCUMENT (Check one or more):			
	<input type="checkbox"/> Interesting letterhead <input type="checkbox"/> Handwritten <input type="checkbox"/> Typed <input type="checkbox"/> Seals	<input type="checkbox"/> Notations <input type="checkbox"/> "RECEIVED" stamp <input type="checkbox"/> Other		
3.	DATE(S) OF DOCUMENT:			
4.	AUTHOR (OR CREATOR) OF THE DOCUMENT: _____ POSITION (TITLE): _____			
5.	FOR WHAT AUDIENCE WAS THE DOCUMENT WRITTEN? _____			
6.	DOCUMENT INFORMATION (There are many possible ways to answer A-E.) A. List three things the author said that you think are important: _____ _____			
	B. Why do you think this document was written? _____			
	C. What evidence in the document helps you know why it was written? Quote from the document. _____			
	D. List two things the document tells you about life in the United States at the time it was written: _____			
	E. Write a question to the author that is left unanswered by the document: _____			

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Fibers Traveling Trunk

Teacher Evaluation

Smith-McDowell House Museum's Traveling Trunk program is an educational outreach service provided to public and private schools. To improve the effectiveness and quality of the program, we need your feedback. Before returning the Trunk, please complete this evaluation form or email education@wnchistory.org with your evaluation. Thank you.

School: _____

Grade level(s) in which Trunk was used: _____

Number of students who used Trunk: _____

Overall, how would you rate the Trunk?

Excellent Good Fair Poor

Were you able to get the Trunk with relative ease?

Were the curriculum materials easy to use and logically organized?

To what degree did the materials provide information to which your students would not have had access?

What would you add or delete from the Trunk?

What did your students enjoy most? Least?

What suggestions do you have to improve the Museum's Traveling trunk program?