



From Dirt to Shirt – Fourth & Fifth Grades

Purpose

Students will learn about the history of agriculture through a book study based on the first President's life of the United States. Students will learn about the importance of cotton in their daily lives by understanding its process from seed to fiber and what food it produces.

Subject Area(s)

Language Arts, Social Studies, and Art

Common Core/Essential Standards

Language Arts

- **ELA Literacy RI 4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text
- **ELA Literacy RI 4.5** Describe the overall structure (e.g. chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text
- **ELA Literacy 5.1C** Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others
- **ELA Literacy 5.4** Report on a topic or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace

Social Studies

- **3.H.1** Understand how events, individuals and ideas have influenced the history of local and regional communities
- **3C&G.2** Understand how citizens participate in their community

Art

- **K.V.2** Apply creative and critical thinking skills to artistic expression
- **K.V.2.1** Recognize that artists may view or interpret art differently
- **K.V.2.2** Use sensory exploration of the environment as a source of imagery
- **K.V.2.3** Create original art that does not rely on copying or tracing

Agricultural Literacy Outcomes

Plants and Animals for Food, Fiber, and Energy

- Understand the concept of stewardship and identify ways farmers/ranchers care for soil, water, plants, and animals

- Distinguish between renewable and non-renewable resources used in the production of food, feed, fuel, fiber (fabric or clothing) and shelter
- Explain how the availability of soil nutrients affect plant growth and development

Essential Questions

1. How did George Washington contribute to agriculture?
2. Why is cotton such an important crop to North Carolina?
3. How does food and fiber impact your daily life?

Vocabulary

Bale: a bundle of cotton fiber tightly compressed and secured with twine.

Boll: the seed-bearing part of the cotton plant in which the cotton fibers are formed.

Fiber: a fine, threadlike piece, produced by the cotton plant.

Furrow: a narrow groove made in the ground, especially by a plow.

Gin: a machine that quickly and easily separates cotton fiber from their seeds.

Meal: the second most valuable by-product of cottonseed made by growing cotton seed.

Spinning: to make (yarn) by drawing out, twisting and winding fibers.

Weave: to interlace (threads, yarns, strips, fibrous material, etc.) so as to form a fabric or material.

Loom: a frame or machine for weaving threads of yarn.

Yarn: a long continuous length of interlocked fibers.

Agriculture: science or occupation of cultivating the soil, producing crops, and raising livestock.

Crops: a plant or animal that can be grown and harvested.

Compost: a mixture of decaying once living things (grass) and their products (coffee) used to fertilize and condition the land.

Student Motivator

Divide students into groups of 3-4 and ask them to complete the *Idea Chart*. Each small group of students will come up with some terms that describe agriculture along with their own definition for agriculture. The teacher will put the correct definition (listed in the vocabulary section) of the word on the board and have students correct and match their definition to the word.

Next, ask students the following questions about their experience with agriculture.

1. *Did you immediately know the meaning of the word?*
2. *Have you heard the word before today?*

3. *Are your families or relatives directly involved in agriculture? How?*

Background Knowledge

Farmer George Plants a Nation by Peggy Thomas is a picture book for older readers. It focuses on George Washington as a farmer, inventor, and scientist. Infused with excerpts from George's letters and diaries, the narrative makes a convincing case for Washington's place as the nation's First Farmer. He invented a combination plow-tiller-harrow, tested different fertilizers, and bred donkeys and horses to create strong mules. His goal to make Mount Vernon self-sufficient carried over to his goal to make the new country independent.

Layne Johnson's richly colored oil paintings in the book portray the Colonial era with fine details. It includes a timeline of Washington's life, shares his views on slavery, and includes a bibliography of additional reading materials and websites. This story shares the beginnings of agriculture in our country during a time when it was practically impossible to plant. George Washington gave hope to Mt. Vernon so that they could live on their land as well as not be restricted to sending back earnings to the England government. This book shares an engaging experience with students through a history lesson in addition to the relevance of working together in a community.

North Carolina has a long history with planting cotton to create food and fiber in our state. Even after 8,000 years, cotton remains the most miraculous fiber under the sun. No other single fiber comes close to duplicating all the desirable characteristics combined in cotton. Cotton is noted for its versatility, appearance, performance, and above all else, its natural comfort. Cotton in today's fast moving world is still nature's wonder fiber, providing thousands of useful products and supporting millions of jobs.

Cotton is the most used fiber in the world. It is popular because it can be used in many different ways. It is used in clothing, home furnishings, and industrial and consumer products. There isn't a part of your day that you don't use something made from cotton. It could be the towel you use after you shower, the shirt and pants you put on, the seats in your car, and the money you use to buy breakfast or lunch. All of these things are made from cotton.

Procedures

Activity 1

1. Read *Farmer George Plants a Nation* by Peggy Thomas to students.
2. As you read, ask guiding questions for deeper understanding.
3. Examples of questions are; *What did George Washington hope to accomplish for Mt. Vernon?*, *How did George Washington learn about agriculture?*, *What reaction did England have when*

they found out George Washington's plan?, How did George Washington lead the New America?, and What did George Washington help the people of the United States do?

4. After listening to the story, students will divide a blank piece of white paper into four equal squares (one horizontal fold across, then one vertical fold in the middle). Label each box (both sides, 1-8) and retell the story from start to finish. Each frame should include a few sentences about the story and a picture to go along with it. See example:
https://twinkl.co.uk/image/resource_preview_xlarge/T2-E-089-Simple-Story-PlanningFrame.jpg
5. Example: **Frame 1**; George Washington was smart and a leader in Virginia. He wanted to help the people of Mt. Vernon grow their own food but the soil was not ready yet. **Picture**: George Washington and a plot of land.

Activity 2

1. Give each student a copy of the *Cotton Terra Nova Reader* to explore.
2. Students should take 2-3 minutes to quickly look over the magazine before beginning the activity.
3. With a partner, students will read over the *What is Cotton* section of the reader and record a question they have or could ask a classmate on an index card.
4. After reading, have the students switch the card with someone in the classroom (other than the partner they read with).
5. This student will become the expert and share out the question and the answer to the class.
6. Students should use the reader to find answers to questions based on the reading.
7. Give each student a sentence strip to complete a Cotton Timeline (Page 2) of the reader.
8. Students will choose 5-6 events to record in their own words and draw out on the sentence strip.
9. Use both sides for more coverage of important events in Cotton's history.
10. Remind students that they want to follow the timeline from first to last and include several key events in the history of cotton.
11. Share out the strip with a partner or put on display after completed.

Activity 3

1. On an 8x10 piece of cardboard, cut 5-7 slits on the top and bottom of the cardboard about ¼ inch apart.
2. Cut individual strings of yarn to fit the 8x10 board.
3. Explain to students that this would be a **loom** and they are going to **weave** yarn on the loom. Each string of yarn should be placed on one side in the top slit and the other side in the bottom slit.
4. Tie the ends of the string to keep in place.
5. An additional long piece of yarn (2-3 feet) should be cut and tied into the first slit at the top of the cardboard. http://www.craftstylish.com/assets/uploads/2008/06/weaving15_1g.jpg
6. Students will practice "over" and "under" weaving against the back yarn placed prior. Discuss

with students how clothing is made, *Was this a harder or easier way to make shirts and pants?, How do we make clothing today?*

7. Beads can be added to create designs within the yarn pattern. Ask students, *How did you get the beading in your clothing?*
8. After students have completed their yarn activity, ask them to design a shirt on paper with a favorite design.
9. Ask students to make a materials list to the side of the drawing with what materials they need: cotton, thread, colored thread, ink, scissors, etc.
10. Have students brainstorm about what materials need to be gathered to make the item they are designing. Students should place their designed piece on their desks and have classmates do a “Gallery Walk” around the classroom to view the designed pieces.

<http://www.youthinarts.org/wp-content/uploads/2012/05/Mask-Gallery-Walk.jpg>

Materials

- White paper
- Pencil
- Colored Pencils
- Illinois Ag in the Classroom Terra Nova Reader: *What is Cotton*
- *Farmer George Plants a Nation* by Peggy Thomas
- Index Cards
- Sentence Strips
- Yarn (any color, type)
- Cardboard squares (8x10)
- Plastic Weaving Needles (optional)
- Beads
- Scissors

Suggested Companion Resources

- *Cotton is a Miracle of Nature* by NC Cotton Producer’s Association (Booklet)
- *Empire of Cotton: A Global History* by Deckle Edge (Book)
- *Child of the Civil Rights Movement* by Paula Young Shelton (Book)
- *Thomas Jefferson Grows a Nation* by Peggy Thomas (Book)
- Cotton Boll Kit (Kit)
<http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=130>
- American’s Heartland: Cotton Show (multimedia)
<https://www.youtube.com/watch?v=6rAFCi4e9N0>

Essential Files

- [Idea Chart](#)

Essential Links

- NC Cotton Resource
<http://www.nccotton.org/>
- Cotton Incorporated; Cotton Campus
<http://www.cottoninc.com/consumer/Cotton-Campus/>
- Story Frame Planning Sheet
https://twinkl.co.uk/image/resource_preview_xlarge/T2-E-089-Simple-StoryPlanning-Frame.jpg
- Weaving on a Loom Example
http://www.craftstylish.com/assets/uploads/2008/06/weaving15_lg.jpg
- Gallery Walk Example
<http://www.youthinarts.org/wp-content/uploads/2012/05/Mask-Gallery-Walk.jpg>

Ag Facts

- 480 pound bale of cotton can make any of these: 215 pairs of jeans, 249 bed sheets, 1,256 pillow cases, 3,085 diapers, 313,600 \$100 bills.
- All parts of cotton are used; cotton stems are plowed back into the soil, cotton seed is used for making food, cotton fiber or lint makes fiber products we use and wear each day.
- Cotton is the leading cash crop in the United States; annual average cotton crops produce 7.5 million cotton seeds and 5 million tons of lint (fiber).
- NC is the sixth ranked producer of cotton in the US with \$304, 438 produced each year.
- “White Gold” is a nickname in North Carolina for cotton that is grown in 55 counties across the state.
- The top 5 North Carolina counties that produce cotton include Halifax, Northampton, Martin, Edgecombe, and Berite.
- The corporate office for Cotton Incorporated is located in Cary, North Carolina.

Extension Activities

Each student gets a cotton boll for ginning. Have students examine the woody stem and the boll holding the fibers. Ask students to predict how many seeds are inside of the boll. Have students pull apart the boll and see if their prediction was true. Students can run cotton fiber through fingers or hands several times (back and forth) to make yarn. Discuss why this process would have taken so long for farmers to do it by hand. *How do we process cotton today?* Use the *Cotton Terra Nova Reader* for more help.

Sources & Credits

- www.wordcentral.com
- <http://www.amazon.com/Farmer-George-Plants-Nation-Thomas/dp/1620910292>
- <http://www.stuffaboutstates.com/agriculture/crops/cotton.htm>
- <http://www.cotton.org/econ/cropinfo/cropdata/county-db.cfm>
- <http://www.agclassroom.org/>