



Farm to You: Cotton (1st & 2nd Grades)

Purpose

Students are introduced to the food and fiber industry – specifically cotton. Students will be able to explain how cotton is produced from boll to bolt, identify various cotton products, and talk about ways to reuse/recycle objects we use everyday.

Duration: 1 hour 15 minutes

Lesson Objective

Students will understand the purpose of growing cotton for fiber production, the role of the farmer that grows the cotton, and how each part of the cotton plant is used.

Subject Areas

Science, Reading, Social Studies

Common Core/Essential Standards:

Science

- **1.L.1** Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive
- **1.L.1.1** Recognize that plants and animals need air, water, light (plants only), space, food, and shelter and that these may be found in their environment
- **1.L.1.2** Given examples of the needs of different plants and animals can be met by their environment in NC or different places throughout the world
- **1.L.1.3** Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there (e.g. reuse or recycle products to avoid littering)

Reading

- **RI 2.3** Describe connection between historical events, scientific concepts, or steps in technical procedures in text
- **RI 2.4** Know and use various text features to locate key facts or information in a text efficiently
- **RI 2.7** Explain how specific images contribute to and clarify a text
- **RL 2.9** Compare and contrast the most important points presented by two texts on the same topic

Social Studies

- **2.H.1** Understand how various sources provide information about the past
- **2.G.2** Understand the effects of humans interacting with their environment.

Agricultural Literacy Outcomes

Agriculture and the Environment



- Describe how farmers/ranchers use land to grow crops and support livestock
- Describe the importance of soil and water in raising crops and livestock

Plants and Animals for Food, Fiber & Energy

- Explain how farmers/ranchers work with the lifecycle of plants and animals
- Identify the importance of natural resources

Food, Health and Lifestyle Outcomes

- Recognize that agriculture provides our most basic necessities: food, fiber (fabric or clothing), energy, and shelter

Culture, Society, Economy & Geography

- Trace the sources of agricultural products (plant or animal) used daily
- Identify plants and animals grown or raised locally that are used for food, clothing, shelter, and landscapes
- Discuss what a farmer does
- Explain why farming is important to communities

Vocabulary

Boll: the part of a cotton plant that contains the seeds; the pod or capsule of a plant.

Gin: to separate cotton fiber from seeds and waste material.

Lint: the long fibers that grow on the cotton seeds inside the cotton boll.

Linters: the short fibers that are left on the seed after the lint is removed at the cotton gin. Linters are used in many products including: furniture padding, cotton balls, writing paper, plastics, paint, and gun powder.

Thread: cotton that has been combed into thin ropes used to make clothing.

Yarn: thread that has been spun to be used for knitting, weaving or sewing.

Student Motivator (5 minutes)

Ask students: What is cotton? On chart paper write down student responses and continue discussion. Where does cotton come from? Add these details to large chart paper. Discuss with students the importance of cotton and the role it plays in the lives of all people, every day. Have a bag with several different pieces/materials that is uses cotton, i.e. cotton ball, Q-tip, shirt, pants, socks, toboggan, ball cap, dish towel, hand towel, pillow – discuss with students if they could imagine a life without cotton. Draw pictures of these objects all around on chart paper to show the every day role cotton plays in our lives. Teacher will ask students: So, where does cotton come from? Where does it start? How does it make so many things? Discuss with students about all things cotton.

Materials

- Chart paper
- Cotton: Field to Fabric in Forty Frames (slideshow)
- *Cotton: Now & Then: Boll to Bolt (book)*

- *From Dirt to Shirt (book)*
- Chart markers
- Cotton boll
- Cotton stalk
- Bag with items made from cotton (Could include: cotton ball, Q-tip, shirt, pants, socks, toboggan, ball cap, dishtowel, hand towel, and pillow)
- Cotton
- Thread
- Yarn
- Ruler
- Scissors
- Brown paper bags
- Markers
- Index cards
- Hole puncher
- *Cotton sequencing activity (See Essential Files)*
- *Cotton picture and fact writing cards (See Essential Files)*

Procedures

Activity 1

Teacher will say: *Now that we have discussed some of the things made from cotton, lets learn how cotton becomes all these things.*

Did you Know (25 minutes): **Teacher will say** - *Fiber is just a word that farmers use to describe the raw product for fabric. The two most important types of fiber produced on the farm are wool and cotton. Cotton and wool are used to make so many things. Wool comes from sheep and cotton is grown from seed that is planted and tended by farmers. Its hard to imagine that so many things come from the start of just a tiny seed. Teacher will pass around a cotton seed. Teacher will say: In North Carolina, farmers begin planting cotton from the end of April to the first of May. The cottonseed is planted best in a well-drained, neutral (pH 6.0-6.3) soil. Teacher will pass around containers with different soil types for students to visibly see the difference. Teacher will say: As the cotton grows the farmers tend to it well and make sure that it does not get infested with insects or affected by other things that could damage the growing cotton. Teacher will show students pictures of the growth of cotton – use cotton slideshow slides 2-10 see additional resources. When Fall comes and the leaves begin to fall the farmers know that it is almost time for the cotton to be picked. Usually in the middle of October farmers begin to harvest their cotton. In today’s time, famers use cotton pickers to pick their cotton. Teacher will pass around a cotton boll – use cotton slideshow slides 11-15 see additional resources. But this is just the beginning.*

1. Show students remaining slides from cotton slideshow *Cotton: From Field to Fabric in Forty Frames* (See **Suggested Companion Resources**).
2. Teacher will pass around cotton boll, then pass around lock of cotton that has not been pulled out (students will feel the cotton seed), then pass around a lock of cotton that has been cleaned and removed of seed. Then teacher will pass around a spool of thread and yarn to show students what the cotton becomes before it is sown into clothes.
3. Teacher will say: “We have seen great pictures in our slideshow and we have felt the cotton fiber and what it feels like when it is turned into thread to make our clothes, but HOW does it get here? I can’t stop thinking about how the cotton is picked. So I have a super fun video to share with you about how the cotton picker works to pick the cotton and how the gin makes the cotton soft and fluffy so it can be spun into thread to make clothes.
4. Share video with students: **How a cotton picker works?** <https://www.youtube.com/watch?v=aIquIpr5-b8> After the video, ask students what they noticed, what they thought was neat. In the video they saw a round bale picker. Show students a video of a cotton picker, module builder, and bole buggy. **From Cotton Picker to Module Builder:** <https://www.youtube.com/watch?v=J4fnreDUvhA> After the video, ask students what they noticed was different about the first video and this one. This is a great literary writing opportunity for compare and contrast (Venn diagrams) and sequence writing (first, next, then, and last). Have students share their thoughts, brainstorm, and then begin writing. Teacher may use this lesson as a whole group activity or have students do independently. ***This lesson is a great introduction into activity 2 (sequence writing). ***

Activity 2 – Cotton Sequencing

1. Read aloud from *Cotton Now & Then: Boll to Bolt* (use whole text or just specific parts to reinforce understanding of how cotton is grown and produced).
2. Give each student sheets from cotton sequence activity; have them sort the pieces in order on their desks.
3. Students will cut out each shape out and whole punch at the bottom center of each shape, *i.e.:* *students will have five separate stages of the cotton plant – seed, sprout, flower, boll, cotton*
4. Students will measure 3 inches of string/yarn to cut, tie, and connect the five stages of the cotton plant together.
5. Provide students with sequence writing paper: *First, Next, Then, Last*. Students will write about each stage of cotton and the farmer’s role through the process of growing cotton. Teacher may want to use directed writing, *i.e. First, the farmer plants the seed in the soil. With lots of sun and a little rain the cottonseed will grow. Next, the farmer...Then, the farmer will...*
6. Separate students into groups of 4. Students will work together talking about the things they learned about cotton – from the seed to the fabric. Students will sort pictures into the correct sequence/order and write special facts or things they remember from the book/power point presentation (See **Suggested Companion Resources**).

Extension Activity: Have students write a story or explanation of what is done with cotton after it is picked and ginned. Talk with students about the process of “ginning cotton” and have them find other items made from cotton.

Homework Activity: Have students go home and try to find other items made from cotton (fiber, lint or seed) – other than the typical items like towels, sheets, clothes, etc.

Activity 3: “Grow your own” Cotton

For this activity students will discuss the different stages of cotton and its many uses. Thinking of the cotton plant, with mature cotton that is ready for harvest – students will make their very own cotton plant.

1. Split students into partners, and give students a spool of yarn (students will need several feet of yarn each for this activity). Then showing about an inch (holding up two fingers) students will start rolling the yarn slowly around their fingers. *Be sure to instruct students not to roll too tightly as it can hurt them.* Once they have an amount about an inch wide and half an inch thick, their partner will take a pair of scissors and snip the end.
2. Then the partner will take a brown pipe cleaner and thread it through the middle of the yarn. Once the pipe cleaner is threaded through instruct the students to slide the yarn carefully off their fingers.
3. Next, the students will use a small pre-cut template to cut out the leaves, or boll (hard outer shell) from brown construction paper. Slide this onto the pipe cleaner so it meets the bottom of the cotton boll. Use brown string to secure the cotton boll.
4. Now switch so the other partner can roll their yarn to make a cotton boll.



Activity 4

1. Give each student 3 brown paper bags. Have the students fold the paper bags in half (*like a hamburger*).

2. Instruct the students to cut off the bottom of the paper bag (*so students can stick their whole hand through the bag*).
3. Then hole punch the folded booklet two times (*to make the binding of the book, using pieces of yarn/string*)



4. Now students will cut out cotton pictures and glue them into one side of their booklet.
5. Students will write down facts and information about cotton: *how cotton is grown, where cotton is grown, what cotton is used to make, how much cotton is in a bale of cotton, etc.* Students may use square pieces of paper and slide them into the pockets or they can glue the pages into the book. Student booklets should be original and colorful, informative and accurate according to what they have learned about cotton.

Activity 5

1. **Pass around the old jeans.** *Teacher will ask students – Think about what you see...think beyond the jeans? Teacher will say: To us this is just a pair of old jeans, ones we would probably throw away – but today we are going to see so much more from this old pair of jeans. Today we are going to see how this little cotton seed (**hold up cotton seed**) can change not only our lives, but also the lives of little children in Uganda. Introduce the students to [Sole Hope](#) – creating shoes for children. (See **Essential Links**)*
2. Talk with students about other things that can be recycled and how we recycle to keep our world clean.
3. Separate students into groups of 4 or 5 and give the groups objects like plastic bottles, plastic bags, paper, cardboard boxes, etc.
4. Students will work together to think of things that could be made from their recycled goods. *This would be a great time to show some images of different things made from recycled objects and even talk about the things we use everyday.*

Formative Assessment:

1. What are five things made from cotton?
2. Why are farmers important to our community?
3. What are some ways you use cotton?
4. What are the stages of cotton as it grows?

Suggested Companion Resources

- Cotton Slideshow
<http://www.cotton.org/pubs/cottoncounts/fieldtofabric/forty-frames.cfm>
- How Jeans are Made
<https://www.youtube.com/watch?v=yvi1gUgtEFQ>

Essential Files

- [Cotton Sequence Activity](#)
- [Cotton Picture & Fact Cards for Writing](#)

Essential Links

- Sole Hope
<http://solehope.org>

Sources & Credits

1. Youtube videos: **How a cotton picker works?** <https://www.youtube.com/watch?v=aIquIpr5-b8>
2. Youtube videos: **From Cotton picker to module builder?** <https://www.youtube.com/watch?v=J4fnreDUvhA>
3. Cotton Stages of Growth Images – <http://www.ncagintheclassroom.com/hiCotton/3rdGrade.pdf>
4. Cotton Facts and Information - http://www.alabamaaitc.org/uploadedFiles/File/Cotton_Unit.pdf
5. AITC Terra Nova Reader -
http://www.agintheclassroom.org/TeacherResources/TerraNova/cir_cottonnews.pdf
6. Paper Bag Booklet Images – <http://hubpages.com/art/Making-scrapbook-albums-from-household-materials>
7. Paper Bag Booklet Images – <http://reliefteachingideas.com/paper-bag-books/>
8. Cotton Craft Ideas – <http://www.caryolynshomework.com/2010/11/sew-and-tell-yarn-pom-poms.html>
9. Cotton Craft Ideas - <http://www.momontimeout.com/2011/12/how-to-make-your-own-pom-poms-tutorial/>
10. Cotton Picture & Fact Card images taken from –
<http://www.smartindianagriculture.in/wp-content/uploads/2016/03/Cotton-seed.jpg>
<http://ipm.ncsu.edu/cotton/insectcorner/photos/cotton.htm>
<https://www.cotton.org/pubs/cottoncounts/fieldtofabric/gin.cfm>