

WELCOME TO THE WORLD OF COTTON: From Dirt to Shirt

(Grades 2-4)



Dear Educator,

We know how important it is to care for the environment by using resources wisely, and we teach students to do the same. Could they name a plant grown in the U.S. which exemplifies using a resource wisely? Cotton — all parts of the plant are used. It is made into fabric, food, money, and so much more. Cotton is a versatile crop and a valuable part of the economy. And the farmers who grow cotton take pride in using sustainable practices to support their farms and the environment.

With this free program from Cotton Incorporated and the education specialists Young Minds Inspired, your students will learn about the cotton plant, its many uses, and how modern technology helps cotton farmers grow more cotton today with less impact on the environment. The standards-based activities support ELA and STEM skills, and each one includes a follow-up activity families can do together at home.

Please share this program with other grades 2-4 teachers at your school. And let us know your opinion of the program by visiting ymiclassroom.com/feedback-cotton. We look forward to your comments and suggestions.

Sincerely,

Dr. Dominic Kinsley
Editor in Chief
Young Minds Inspired



Questions? Contact YMI toll-free at 1-800-859-8005 or by e-mail at feedback@ymiclassroom.com.

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Target Audience

Students in grades 2-4 and their families

Program Objectives

- Introduce students to cotton's value as a natural fiber that comes from a plant
- Encourage students to explore and evaluate the versatility of the cotton plant
- Raise awareness of sustainable agricultural practices adopted by cotton farmers

Program Components

- This one-page teacher's guide
- Three reproducible activity sheets
- A colorful classroom poster
- A reply card for your comments
- An online 360° video field trip, "Cotton: From Dirt to Shirt," at ymiclassroom.com/cotton
- A standards chart, additional resources, and online feedback form also available at ymiclassroom.com/cotton

How to Use This Program

Make copies of the activities before displaying the poster in your classroom. Students will need pencils, crayons, or markers to complete the activity sheets. Introduce the program with the five-part video field trip, "Cotton: From Dirt to Shirt," and revisit appropriate segments of the video as you present each activity. Have students share their completed sheets with their families so that they can do the activities at the bottom of each sheet together.

Activity 1

What Is Cotton?

Students will be introduced to the cotton plant, including a brief overview of what it is, its life cycle, where it grows, and what it needs to grow.

Ask students, "What is cotton?" and let them share their answers. Explain that cotton is a plant, a fabric, and a food source. We use all parts of the cotton plant. We use cotton fiber to make fabric for clothes and other items. We use cottonseeds in animal feed, and to make cottonseed oil for human foods as well as health and beauty products. This versatility makes cotton an important crop.

Revisit the planting and harvesting segments of the "Cotton: From Dirt to Shirt" video field trip. Then distribute the activity sheet and read the opening paragraph together. Have students complete the activity individually or with a partner. **Answers:** Part 1: 4, 2, 3, 1. Part 2: Possible answers include warm weather, humid weather, lack of cold rain, warm soil, long growing period.

Activity 2

Sustainable Farming

Students will explore the technology that allows cotton farmers to improve their farms and protect the environment.

Tell students that an important part of growing cotton is taking care of the environment. A healthy environment

supports the growth of cotton and the health of humans alike. That's why cotton farmers use sustainable farming practices that conserve resources on their farms. For example, they use shredders to chop up the cotton stalks after the harvest and put them back into the soil where they provide nutrients, help prevent soil from washing away (erosion), and help keep the soil moist.

Review the sustainable farming practices discussed in the harvesting segment of the "Cotton: From Dirt to Shirt" video field trip. Then distribute the activity sheet and review the instructions. Complete the activity together as a class, in small groups, or with peer partners. When finished, review the answers as a class. **Answers:** Part 1: 1. B; 2. C; 3. A. Part 2: Answers will vary.

Activity 3

Made from Cotton

Students will learn how cotton is used in a variety of everyday items.

Display the poster and lead students in an exploration of products that are created from the cotton plant. Ask students to recall some of the items made from cotton and cottonseeds that were mentioned in the ginning, spinning, and fabric making segments of the video field trip. Do your students know that jeans are made from cotton? Or that cottonseed oil goes into manufacturing both ice cream and potato chips? Even U.S. paper currency is made of 75% cotton, which helps make it durable.

How can cotton be made into so many products? Have students consider what properties or characteristics make cotton so versatile. For example, cotton fibers are soft (cotton swabs, t-shirts) and durable (jeans, paper money), while cottonseed oil improves flavor and helps preserve freshness (potato chips, salad dressing).

Distribute the activity sheet and review the instructions. You may choose to have students work in teams or independently, depending on grade and skill level. If students do not have individual devices, display <https://thefabricofourlives.com/cotton-fabrics#alpha> on a screen to help them complete Part 2. Once done, have students share their cotton "recipes." **Answers:** Part 1: fabric, versatility, jeans, recipes. Part 2: Answers will vary.

Extension: Have students create a mock-up of their cotton "recipe" using paper or donated cotton scraps. (Ask parents or guardians in advance to donate fabric, making sure that it is cotton. Use this extensive pictorial guide to be sure: <https://thefabricofourlives.com/cotton-fabrics#alpha>).

Resources

- cotton.org/pubs/cottoncounts/resources.cfm
- cottoninc.com/about-cotton/pressroom/did-you-know
- sanangelo.tamu.edu/extension/agronomy/agronomy-publications/how-a-cotton-plant-grows
- cottontoday.cottoninc.com
- bluejeansgogreen.org
- ymiclassroom.com/cotton

ACTIVITY 1

What Is Cotton?



REPRODUCIBLE MASTER

Cotton is a plant that produces a white, fluffy cotton boll. We use cotton to make clothes and paper money. We use the oil from cotton seeds to make food and skin creams. And we use the leftover seed parts to feed farm animals. No part of the cotton plant goes to waste!

Cotton plants need sunshine, healthy soil, and water. Farmers plant cotton seeds in the spring when the soil is warm and moist. And they check the weather forecast to be sure it

will stay warm while the seeds sprout. A cold rain can ruin a young cotton crop.

Cotton plants take about six months to produce cotton bolls. The first sign is a flower bud called a square. The buds grow into beautiful yellow cotton flowers that turn pink, then dark red just before the petals fall off. What's left is a seed pod that slowly grows into a cotton boll. When the boll splits open to let the cotton fibers dry in the sun, it is time to harvest!



Part 1: These pictures show how a cotton plant grows. But the pictures are out of order. Number the pictures in the correct order to show the cotton growth cycle.

boll



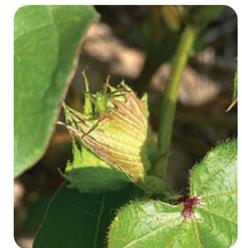
flower



pod



square



Part 2: This is a list of states where cotton is grown in the U.S. Look them up on a map. List two reasons why you think these states are best for growing cotton. **Hint:** Think about geography and weather!

1. _____

2. _____

Alabama
Arizona
Arkansas
California
Florida
Georgia
Kansas
Louisiana
Mississippi

Missouri
New Mexico
North Carolina
Oklahoma
South Carolina
Tennessee
Texas
Virginia



Families! How many products made from cotton do you have in your home? Is there anything in your home containing cotton that might surprise you? Learn more about cotton by watching the planting and harvesting segments of the "Cotton: From Dirt to Shirt" video field trip at ymiclassroom.com/cotton.

ACTIVITY 2

Sustainable Farming



REPRODUCIBLE MASTER

Sustainable farming means farming in ways that help *conserve* or use less natural resources. For example, instead of plowing their fields, most cotton farmers plant their seeds under old cotton stalks and plants called *ground cover* that keep the soil moist. This also protects soil from washing away in the hard rain, which is called *erosion*.

Cotton farmers are careful with water, too. They use *precision irrigation* to target only the plants that need water. This helps them conserve water and still keep their cotton plants healthy.

Cotton plants also need fertilizer to help them grow. But using too much fertilizer can harm the ecosystem in nearby streams and lakes. That's why cotton farmers use special technology to map out where to put the fertilizer and how much to use. They know that a healthy ecosystem is good for everyone — and good for cotton!



Part 1: Draw a line to match the “cause” sentences to the “effect” sentences to show how cotton farming practices help the environment.

Cause

1. Cotton farmers use *precision irrigation* that targets only the plants that need water.
2. Cotton farmers don't plow the soil to plant their seeds.
3. Cotton farmers use mapping technology to apply fertilizer only where it is needed.

Effect

- A. This helps keep fertilizer out of the nearby ecosystem.
- B. This helps prevent water from being wasted.
- C. This helps prevent soil erosion.

Part 2: Imagine that you are a cotton farmer. What could you invent to help your cotton grow and also help the environment? Write your idea and draw a picture of your invention on the back of the sheet.



Credit: Cotton Incorporated



Families! Denim jeans are one of the world's most popular items made from cotton. Did you know you can recycle jeans and other denim clothing items with the Blue Jeans Go Green™ project? Recycling clothing is another way to help the environment. Learn more at <https://bluejeansgogreen.org/>.

ACTIVITY 3

Made from Cotton



REPRODUCIBLE MASTER

Cotton is famous for its versatility. This means it can be used many ways. For example, cotton fibers are used to make jeans, dress shirts, t-shirts, sweatshirts, towels, bedsheets, and more. But why stop there? Scientists at a cotton lab in North Carolina are finding new ways to use cotton and new kinds of cotton fabric. In fact, the lab has a collection of more than 7,500 "recipes" for creative new ways to make types of cotton fabrics.

Part 1: Complete the sentences using the underlined words in the paragraph.

1. Scientists are working to discover new kinds of cotton _____.
2. Cotton is famous for its _____.
3. Cotton is used to make _____ and much more.
4. A North Carolina cotton lab has more than 7,500 _____ for new ways to make cotton fabrics.



Part 2: Imagine that you are a scientist at the cotton lab. Is there a new type of cotton fabric that you could create?

Read about some of the different types of cotton fabrics shown at <https://thefabricoffourlives.com/cotton-fabrics#alpha>.

Then use your imagination to come up with a whole new type of cotton fabric. Use this space to name your fabric, describe your fabric, and tell how to use or wear your fabric. Then draw a picture of what it looks like in the box at right.

Name your fabric: _____

Describe your fabric: _____

Tell how to use or wear your fabric: _____



Families! Look around your home and find some ways you use cotton. Take a photo of your favorite and bring it in to share with your child's classmates!