

COTTON SCIENCE AND SUSTAINABILITY

Growing Cotton

(Grades 4-6)



Dear Educator,

Welcome to spring! This year, greet the new growth cycle with a fresh approach to your science lessons by teaching about cotton.

When we teach about spring planting, we often think of food crops or flowers. But did you know that cotton is one of the most important crops in the United States? In fact, the U.S. produced 18.4 million bales of cotton in 2018, and the cotton industry is responsible for more than 125,000 jobs.

In this activity, students in grades 4-6 will learn how cotton grows and explore the environmental factors farmers have to consider throughout the plant's lifecycle. You can use the activity as a stand-alone science lesson, or add it to the other lessons in the **Cotton Science and Sustainability** STEM program available at ymiclassroom.com/cotton, made possible by Cotton Incorporated, the not-for-profit cotton research and promotions company.

In addition, be sure to check out the interactive whiteboard game at the link above for a fun and educational activity you can do with your whole class or in small groups with laptops or tablets. Use it as a preview, a review activity, or even as an informal assessment.

Please feel free to share these materials with other teachers in your school. The materials are copyrighted, but you may make as many copies as necessary to meet your students' needs. Then, please comment online at ymiclassroom.com/feedback-cotton to let us know your thoughts on this program. We depend on your feedback to continue providing free educational programs that make a real difference in students' lives.

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 4 to 6 and their families

Program Objectives

- Teach students about cotton's value to the environment as a natural fiber
- Help students learn about and evaluate the properties and benefits of cotton
- Explore the versatility of cotton
- Examine the lifecycle of cotton and cotton production

Program Components

- This one-page teacher's guide
- One reproducible activity sheet

More Cotton Science and Sustainability Materials Online

Visit ymiclassroom.com/cotton for:

- Additional activities: *The Fiber Factor*, *Break It Down!*, and *Cotton and the Planet*
- A classroom poster with fun, interesting cotton facts
- *Cotton: From Farm to Fashion to Food*, an interactive whiteboard activity
- An online feedback form at ymiclassroom.com/feedback-cotton
- Common Core and Next Generation Science Standards alignment chart

How to Use This Program

Make copies of the activity sheet for your students, and explore the additional resources online.

Activity

Growing Cotton

Tell students that today they are going to learn about one of the most important crops grown in the United States. Ask them if they can guess what it is. Provide a hint: It's something that is generally used or seen daily, but most people do not grow it in their home gardens! Explain that in 2018, 18.4 million bales of cotton were produced in the United States. And the cotton industry is responsible for more than 125,000 jobs. While we love our jeans and

soft cotton linens, what do we know about where and how cotton is grown?

Pass out the activity sheet.

Explain to students that they will work together to explore these questions as they read about how cotton is grown. For Part 1, have students read independently about the lifecycle of cotton and answer the questions. Then, in Part 2, students unscramble words to discover the largest cotton producing states in the country. **Answers: Part 1:** 1. At least 60 degrees Fahrenheit. 2. 105 to 130 days. 3. Answers will vary, and may include being aware of and monitoring environmental factors that affect growth. **Part 2:** 1. Texas 2. Georgia 3. Mississippi 4. Arkansas 5. California

Extensions

1. Add some creative writing STEAM to your STEM curriculum by asking students to create a jingle about cotton based on what they've learned about its importance and versatility.
2. Have students illustrate the lifecycle of the cotton plant using the information in the activity. Illustrations may be a circle chart, flow chart, diagram, infographic, or another format of choice.
3. Does your state produce cotton? Research all the U.S. states that produce cotton.

Resources

- How a Cotton Plant Grows: sanangelo.tamu.edu/extension/agronomy/agronomy-publications/how-a-cotton-plant-grows/
- What is Cotton: learn.genetics.utah.edu/content/cotton/what/
- The Story of Cotton: cotton.org/pubs/cottoncounts/story/how.cfm and cotton.org/edu/faq/
- USDA Crop Production 2018 Summary: nass.usda.gov/Publications/Todays_Reports/reports/cropan19.pdf
- Top 10 Produce Crops in America: agamerica.com/power-of-10-top-10-produce-crops-in-the-u-s/

ACTIVITY

Growing Cotton



REPRODUCIBLE MASTER G4-6

When you throw on your favorite jeans, do you wonder how they were made? It starts with a plant and dedicated cotton farmers.

Part 1: Read the passage below and then answer the questions.

Did you know that the United States is the world's third largest producer of cotton? And that cotton is both a fiber *and* a food crop? Cotton is an important plant, and like all plants, cotton needs certain things to grow well.

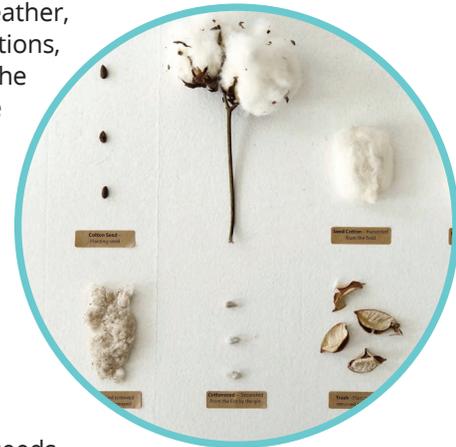
Cotton grows best in warm areas. In the United States, most cotton is grown in southern states. Planting takes place from February to June, depending on location. Cottonseeds grow best in firm, warm, and moist soil. In fact, the soil should be at least 60 degrees Fahrenheit down to 8 inches below the surface.

Once planted, the seeds take about 5 days to sprout. Flower buds called *squares* appear about two months later. These blossoms open and then shed their flower petals about a month after that. They leave behind a green seed pod called a *boll*, which is shaped like a football. Inside the boll are cottonseeds covered with fibers. These fibers continue to grow until they burst open the ripened brown boll, revealing fluffy cotton ready to be *harvested* or picked from the plant. This usually happens about 105 to 130 days after planting.

Throughout the growth cycle, cotton farmers take special care of the crops to help them grow. From selecting seeds

to monitoring the soil, weather, and environmental conditions, farmers work to protect the cotton crops and prepare them for harvest.

Once harvested, machines called *cotton gins* separate the cottonseeds from the cotton fibers. The fibers are used to make paper money, yarn for fabrics, and other things. Cottonseeds are used as cow feed and to make cottonseed oil, which is found in some of our favorite foods such as bread, cereal, and snacks.



1. How warm should the soil be before planting cottonseeds? _____
2. How many days does it take for a cotton plant to go from being planted to being harvested?

3. How can farmers help protect their cotton crops?



Part 2: Several U.S. states produce cotton. Unscramble the letters below to discover the five states that are the largest producers of cotton.

1. SATEX _____
2. IAEORGG _____
3. SSSIIIPPM _____
4. SSKAANR _____
5. FORCILAAN _____