

THE WORLD OF COTTON: The Secret Life of Denim



Dear Educator,

Your students are likely pros when it comes to recycling paper and plastic. But what they might not know is that they can recycle something they probably wear every day — denim made from cotton. The cotton used to make denim is extremely versatile, and all parts of the plant are used when harvested, so nothing goes to waste. And the sustainability story doesn't end there. With the Blue Jeans Go Green™ program, denim clothing becomes a recycled resource, transformed into energy-saving insulation.

Explore the world of cotton and the Blue Jeans Go Green™ denim recycling program with this free teaching kit created by Cotton Incorporated and the curriculum specialists at Young Minds Inspired. The engaging lessons include cross-curricular activities in science, math, and language arts that support Next Generation Science and Common Core State Standards. Each activity includes an extension activity the whole family can enjoy.

Please share this program with other teachers at your school. And let us know your opinion of this program by visiting ymiclassroom.com/feedback-denim. 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
Grades 2-4

Program Objectives

- Inform students and families about the cotton plant lifecycle
- Reinforce recycling concepts
- Encourage families to recycle their denim items made from cotton

Program Components

- This one-page teacher's guide
- Three reproducible activity sheets
- A colorful classroom poster
- A reply card for your comments
- A program microsite at ymiclassroom.com/denim with a standards chart, additional resources including the "Cotton: From Dirt to Shirt" 360° video field trip, and an online feedback form

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. 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 How It All Began

In this activity, students meet Baxter Boll, who introduces the cotton lifecycle shown on the poster.

Point to the image of Baxter Boll on the poster and ask students if they can figure out what a boll is. Reveal the answer by reading the poster copy together. Share that the average American owns 11 pieces of denim, including 6 pairs of jeans! Take a class poll. Have students raise their hands if they wear denim jeans. Have students count the results. Older students can determine what fraction of the class the results represent.

Explain that making denim is only one way to use cotton. In fact, all parts of a cotton plant are used in some way — nothing goes to waste! Cottonseeds are replanted or used as animal feed or squeezed to produce cottonseed oil, which is used in many foods and other products. The leaves, stems, and other parts of the cotton plant are used as mulch, which helps new cotton plants grow. You may wish to show the "Cotton: From Dirt to Shirt" 360° video field trip found at ymiclassroom.com/denim to give students background on harvesting cotton.

Distribute the activity sheet and review it with students. For Part 2, explain that *all* the items pictured are made with parts of a cotton plant. For Part 3, invite students to share their responses for what they think Baxter will become.



Activity 2 The Secret Life of Denim

In this activity, students learn about the Blue Jeans Go Green™ denim recycling program.

Start this activity by asking students what they do with their clothes once they become worn out or they outgrow them. Explain that just like we recycle paper and plastic so they can be turned into something new, we can also recycle denim clothes, including denim jeans that are made from cotton, so that they can be turned into new products.

Pass out the activity sheet and read about the Blue Jeans Go Green™ program, which helps turn denim into energy-saving insulating material, used in homes, pet beds, mattresses, food insulation boxes, and more. As a class, visit bluejeansgogreen.org to learn more, or show students the process using the Recycling Denim animated gif at ymiclassroom.com/denim. Then give students time to compose their letters to family and friends. Have student volunteers read their letters and encourage all students to share their letters with their families.

Activity 3 It All Adds Up

In this math activity, students solve word problems to learn more about recycled denim.

Start this activity by showing students the brief informative video, "Reducing the Impact on the Earth", found at bluejeansgogreen.org/about-us, to learn how recycling denim made from cotton helps the environment. Ask students what facts they find most surprising.

Pass out the activity sheet and review the instructions for solving the math problems. You may choose to have the students work in teams or independently, depending on grade and skill level.

Answers: Part 1: 5 million; Part 2: $215 + 215 = 430$ pairs of jeans; Part 3 answers will vary.

Start a Denim Drive at Your School! Visit bluejeansgogreen.org/recycle-denim to learn about starting a school drive to collect worn denim for Cotton's Blue Jeans Go Green™ denim recycling program. Speak to your school administration to get all permissions needed. Have your students design announcement posters to display and distribute around the school. As an alternative to collecting denim, have students create flyers to encourage families to go to the Blue Jeans Go Green™ website to learn how they can recycle their old denim.

Resources

- bluejeansgogreen.org
- cotton.org/pubs/cottoncounts/story/importance.cfm
- cottontoday.cottoninc.com
- cotton.org/pubs/cottoncounts/what-can-you-make.cfm
- ymiclassroom.com/denim



ACTIVITY 1

How It All Began



REPRODUCIBLE MASTER

Did you know that denim jeans are made from a plant? They are made from the cotton plant. Learn about the cotton plant with me, Baxter Boll.



Part 1: Read Baxter Boll's story about the cotton lifecycle. Then answer the question below.

The cotton plant begins as a seed, which grows into a little sprout. After about two months, the plant produces a flower bud called a square, which blooms after a few weeks. Then, a few weeks after that, the flowers shed their petals and the cotton plant forms a boll — that's me! A boll is a seed pod that looks like a little green football.



It takes about two months for the boll to fill up with cotton fibers. Once full, it bursts open, and the fields are covered with fluffy white cotton ready for harvest. Cotton farmers use big machines to pull the plants out of the ground and separate the cotton fibers from the rest of the plant. Then they send the fiber to a cotton gin, where it is cleaned. From there, the cotton fiber goes to a spinning mill, where it is turned into yarn.



Cotton yarn is used to make cloth, like the denim for jeans. But that's not the end of the story! When cotton denim jeans (and other denim items) get worn out, they can be recycled, instead of being tossed in the trash. Recycled denim is used to make insulating material for homes, packaging, or even pet bedding!



What part of the cotton lifecycle is Baxter? _____

Part 2: Look at the pictures. Circle the ones you think are made with cotton.



Part 3: What do you think Baxter Boll will become? On the back of this sheet, draw a picture of the product you think Baxter will become. Write a sentence about why you chose the product.

Families! Can you name five products made from cotton or that contain cotton? Check out cottoninc.com/aboutcotton/pressroom/did-you-know to learn more.





ACTIVITY 3

It All Adds Up



REPRODUCIBLE MASTER

The Blue Jeans Go Green™ program has helped protect our environment. Since 2006, it has kept about 2,290 tons of denim from being thrown away and buried in landfills. But about how many pairs of jeans is that?

Part 1: To find out, first count the number of letters in the word GREEN. Write that number in the box after "Nearly." Then finish your answer by using the alphabet key to write the correct letter on each of the following blank spaces.

Nearly _____ pairs of jeans have been recycled!
13 9 12 12 9 15 14



Alphabet Key

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Part 2: After it is cleaned at the gin, cotton fiber is pressed into huge bales. Each bale of cotton fiber can be made into 215 pairs of jeans. How many pairs of jeans can be made from two bales of cotton?

Write an equation and solve it: _____

Part 3: The average American owns 6 pairs of jeans. If each person in your household has 6 pairs of jeans, how many pairs of jeans are probably in your household? On the back of this sheet, draw an array or use groups to help you solve this problem.

There are probably _____ pairs of jeans in my household.

Now count up all the pairs of jeans your family has at home and find the average. How close are you to the average (6 pairs of jeans)?



Families! Not only can denim be recycled, but with a little creativity and imagination, it can be repurposed into something new and fun! Looking for ideas? Watch the video titled "Sustainable Fashion Essentials" at bluejeansgogreen.org/recycle-denim and see what you can make out of your old favorite pair of jeans or other denim clothing!

Meet Baxter Boll!

Hi!

My name's Baxter.



I'm a cotton boll, which means I'm on my way to becoming a t-shirt, a towel, a pair of jeans, or something else made with cotton.

Let me show you how it happens!

The Cotton Lifecycle

1. Seed

All cotton plants start out as a seed.



2. Sprout

Soon the seed grows into a sprout.



3. Square

After about two months, the cotton plant produces a flower bud, called a square.



4. Boll

The cotton flowers bloom after a few weeks. Then, a few weeks after that, the flowers shed their petals and the cotton plant forms a boll — that's me! A boll is a seed pod that looks like a little green football.



5. Fiber

It takes about two months for the boll to fill up with cotton fibers. Once full, it bursts open and the fields are covered with fluffy white cotton.



6. Harvest

Cotton farmers use big machines to pull the plants out of the ground and separate the cotton fibers from the rest of the plant. Then they send the fiber to a cotton gin, where it is cleaned.



7. Yarn

Once it is cleaned, the cotton fiber goes to a spinning mill where it is turned into different types of yarn.



8. Fabric

Cotton yarn is used to make fabric for towels, sheets, totes, and many different types of clothing that is in our closets, like t-shirts, socks, and denim jeans. Because it's made from cotton, denim lasts. It can be worn for a long time.



9. Recycling

But when denim jeans are worn out, they can be recycled! The cloth is turned back into cotton fiber, which is used to make insulation for homes, packaging, and even pet bedding. This helps keep tons of old denim clothes out of the trash, which helps protect our environment. You can learn more about recycling denim at bluejeansgogreen.org/recycle-denim!



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