

Be Ag Smart! THE COTTON CONNECTION

Be Ag Smart! The Cotton Connection has been developed and produced by Texas Farm Bureau Agriculture in the Classroom

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COTTON In Touch With You Daily

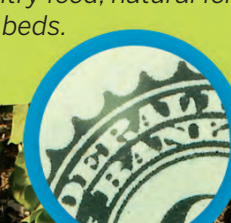
Cotton is one of the most important crops grown in the United States. From field to fabric and more, cotton touches us daily in the food we eat, the clothes we wear and in so many other ways. It can truly be called the ALL-PURPOSE CROP.

Cotton By-products

Where did the
T-Shirt
get its name?

The first T-shirts were elbow and hip length undershirts issued to sailors in the U.S. Navy in 1880. The shirt resembled a perfect "T" when laid out on a flat surface.

T-shirts are
made from
cotton!



Did you know? Cotton is a food, fiber and feed crop!

This means that not only do we wear cotton, but we eat it and can feed it to livestock, too. In the U.S., cotton is regulated as a food crop.



There are three primary products derived from cotton production: cotton lint, linters and cottonseed.

Cotton Lint

Cotton lint is the raw fiber from the cotton plant which is pressed into bales at the cotton gin. Lint is used in clothes, shoe strings, pillowcases, denim, towels and dollar bills.

Linters

Linters are short fibers that cling to the seed after the lint is removed. Linters are used in plastics, paper products, films, yarns and cosmetics.

Cottonseed

About two-thirds of a harvested cotton crop is composed of seed, which is crushed to separate its three products—oil, meal and hulls.

Cottonseed oil:

The oil is the cottonseed's most valuable by-product. It is obtained by crushing the cottonseed kernel. Cottonseed oil is used in cooking oil, salad dressing, soaps, cosmetics and in preparation of snack foods like chips, crackers and cookies.

Hulls:

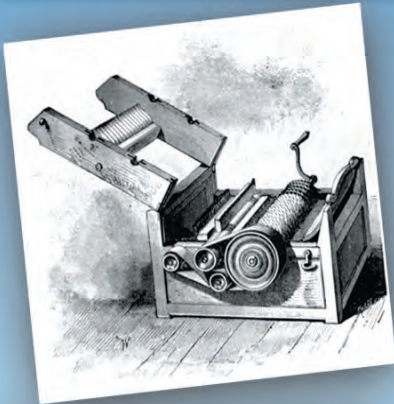
Cotton hulls are the outer covering of the cottonseed. Hulls are used in livestock feed, fertilizer, fuel and packing materials.

Meal:

Meal is the second most valuable by-product of cottonseed. Meal is made by grinding the cottonseed and is used in livestock and poultry feed, natural fertilizer for lawns, gardens and flower beds.



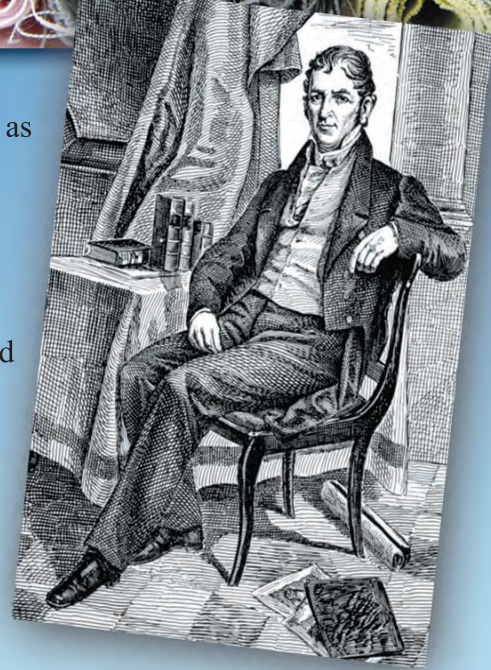
History of Cotton



- Cotton has been cultivated and used to make fabrics in the Americas for at least 7,000 years.
- Cotton cloth was used to wrap mummies in Egypt as early as 12,000 B.C.

Did you know?

- In the early days of growing cotton, the lint had to be separated from the seed by hand. It took one person working a 10-hour day to separate 1 pound of cotton lint from the seed.
- In 1793, Eli Whitney invented the cotton gin (short for engine) that could separate 50 pounds of lint in a 10-hour day. The cotton gin revolutionized the cotton industry.



Today's cotton gin

- Improvements have been made to the gin over the years. Today, cotton gins have multiple machines and parts for removing trash, drying, moisturizing, sorting, cleaning and baling in 480-pound bundles called bales.
- A modern cotton gin can separate nearly 29,000 pounds of lint in ONE HOUR!

FUN FACTS

What is produced from a bale of cotton?

One bale of cotton can make:

215	Jeans or	249	Bed Sheets or
690	Terry Bath Towels or	765	Men's Dress Shirts or
1,217	Men's T-Shirts or	1,256	Pillowcases or
2,104	Boxer Shorts or	3,085	Diapers or
4,321	Mid-Calf Socks or	313,600	\$100 Bills

What is a module?

- Once cotton is harvested, it is stored in modules for protection against the weather.
- A module builder hydraulically compresses the cotton from the picker into a module of cotton, which is usually stored in the field or in the gin yard until the cotton is ginned.
- A module holds about 13 to 15 bales.
- By forming modules that can be stored, either in the field or at the gin, harvest can continue when crop conditions and weather allow, regardless of the ginning rate.
- Round modules are fully enclosed on the circumference by a specially engineered polyethylene film that protects the cotton while also providing a compressive force to maintain the module density. This density protects the cotton from moisture and wind.

What is a bale?

- The bale is a standard of measurement for processed cotton. Cotton bales weigh between 480 and 500 pounds.
- At the cotton gin, the cotton fiber is separated from the cotton seed. The cotton fiber is compressed into bales.
- Every year, approximately 8 to 9 million bales are used by U.S. textile industries.
- The U.S. exports 6 to 9 million bales of cotton each year.

Cotton and U.S. currency

- United States paper currency is made up of 75% cotton and 25% linen.
- This means that there is three-fourths of a pound of cotton in each pound of dollar bills.

Brain Teaser

If one bale of cotton makes 313,600 \$100 bills, then how many \$1 bills can a bale of cotton produce?

Answer on page 4

Did You Know...

- In 1848, Levi Strauss invented a new kind of cotton work pants called denim jeans. Gold miners in California used them because they were so rugged. Today, we still wear Levis.
- In 1905, Wilbur and Orville Wright used cotton fabric to cover the wings of the first airplane they flew at Kitty Hawk, N.C.



Top Cotton-Producing States



Can you label the states?

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Alabama | <input type="checkbox"/> Missouri |
| <input type="checkbox"/> Arizona | <input type="checkbox"/> New Mexico |
| <input type="checkbox"/> Arkansas | <input type="checkbox"/> North Carolina |
| <input type="checkbox"/> California | <input type="checkbox"/> Oklahoma |
| <input type="checkbox"/> Florida | <input type="checkbox"/> South Carolina |
| <input type="checkbox"/> Georgia | <input type="checkbox"/> Tennessee |
| <input type="checkbox"/> Kansas | <input type="checkbox"/> Texas |
| <input type="checkbox"/> Louisiana | <input type="checkbox"/> Virginia |
| <input type="checkbox"/> Mississippi | |

Boll Weevil



- The boll weevil is the primary enemy of the cotton plant.
- Boll weevils eat the young buds, flowers and bolls of the cotton plant.
- In 1892, the boll weevil migrated from Mexico through the area of Brownsville, Texas and spread rapidly throughout the Cotton Belt.
- In the late 1970s, the National Boll Weevil Eradication Program was launched by the United States Department of Agriculture.
- The National Boll Weevil Eradication Program ranks close to Eli Whitney's invention of the cotton gin as one of the greatest advancements ever for the U.S. cotton industry.
- There are several regions of Texas that are not boll weevil-free. Our state is still battling this pest.
- Today, more than one million cotton acres are active in the eradication program.

Cotton—from Field to Fabric

1. PLANTING



Farmers prepare the ground for planting by creating furrows in the soil. This lets the soil warm faster in the spring and directs irrigation water across the field. When the soil reaches about 65 degrees, mechanical planters will place the seed in the soil. The mechanical planters can cover as many as 12 rows at a time. Cotton planting can begin as early as February in South Texas and as late as June in northern areas of the Cotton Belt.

2. GROWING



Seedlings emerge from the soil within one or two weeks after planting. The plant will bloom at about 8-10 weeks. Within three days, the flower will pollinate itself, change from a creamy white color to pinkish red and then wither and fall off—leaving behind the developing boll. The cotton boll develops at about 10 weeks.

3. BOLL OPENS



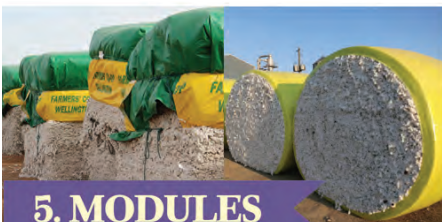
Cotton bolls open 50 to 70 days after bloom, letting air in to dry the white, clean fiber and fluff it. Now, the cotton crop is ready to be harvested.

4. PICKING



For hundreds of years, cotton was picked by hand. Now, thanks to technology, equipment such as the mechanical cotton picker or brush stripper are used to remove the fiber from the plant. Cotton harvesting begins in July in South Texas and in October in more northern areas of the Cotton Belt.

5. MODULES



Cotton from the picker is dumped on the ground and compressed hydraulically with a module builder to form a module. There are two kinds of modules that allow cotton to be stored until it can be ginned. Round modules and rectangular modules allow farmers to continue to harvest, utilizing the best weather conditions, regardless of the ginning rate in their area.

6. GINNING



The modules are taken to the cotton gin where the cotton will be dried, cleaned and have its seed and fiber mechanically separated. The gin contains revolving circular saws that pull the raw fiber through closely-spaced ribs that prevent the seed from passing through.

7. COTTONSEED



The cottonseed is processed into cottonseed meal, cottonseed oil, hulls and linters. The meal and hulls can be used in livestock feed or in fertilizer. The oil is used in several products, including cooking oils, cosmetics and snack foods. Linters are manufactured into a variety of chemical and non-chemical products.

8. COTTON LINT



The raw fiber, now called lint, is pressed into bales. These bales are banded with 8 steel straps, tested for classing, wrapped for protection and then shipped to storage yards, textile mills and foreign countries. Textile mills process these bales in stages until they produce yarn or cloth—which can be made into clothing, sheets, towels and other products.

COTTON Patch Scramble

2.



tetoo hatsp

What is that? Unscramble the letters below each photo to spell out the name of these cotton by-products you use every day.

3.



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1.



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6.

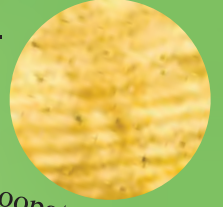
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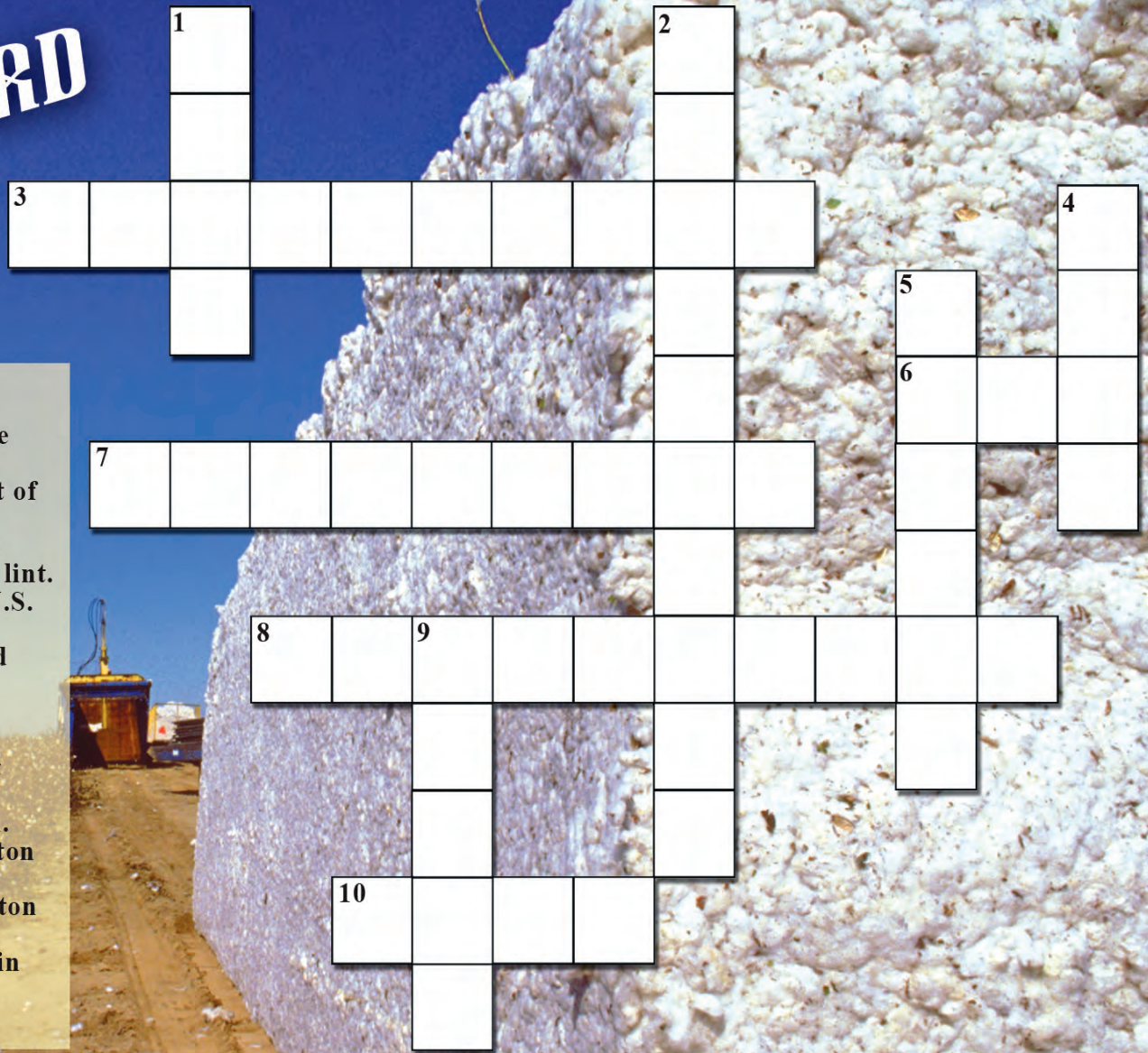
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COTTON CROSSWORD



ACROSS

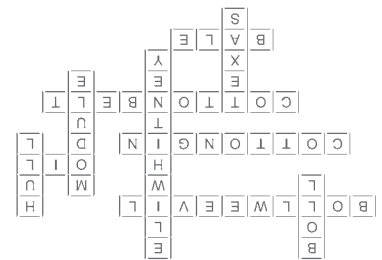
- 3 Insect that is enemy to the cotton plant.
- 6 Most valuable by-product of the cottonseed.
- 7 Machine used to separate the seeds from the cotton lint.
- 8 Name of the area in the U.S. where cotton is grown.
- 10 480 pounds of compressed cotton fiber.

DOWN

- 1 The part of the plant that holds the cotton fiber.
- 2 Inventor of the cotton gin.
- 4 Outer covering of the cotton seed.
- 5 Storage for harvested cotton before going to the gin.
- 9 This state is number one in the production of cotton.

Cotton Patch Scramble Answer Key:

- 1. shoe strings 2. toothpaste 3. thread
- 4. cooking oil 5. livestock feed 6. dollar bill
- 7. pillowcases 8. potato chip



Cotton Connection Solution:

Page 2 Brain Teaser Answer: The same number—313,600



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