

TEXAS FARM BUREAU'S
BE AG SMART

COTTON

connection

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

P.O. Box 2689
7420 Fish Pond Rd.
Waco, TX 76710

Teachers—For lesson plans, videos and other resources for your classroom, go to texasfarmbureau.org/aitc



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.

DID YOU KNOW?

Cotton is a:

FEED CROP



FIBER CROP

FOOD CROP



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



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.



- WORD SCRAMBLE ANSWER KEY**
- SHOE STRINGS
 - TOOTHPASTE
 - THREAD
 - COOKING OIL
 - LIVESTOCK FEED
 - DOLLAR BILL
 - PILLOWCASES

- CROSSWORD ANSWER KEY**
- Across**
- BOLL WEEVIL
 - OIL
 - COTTON GIN
 - COTTON BELT
 - BALE
- Down**
- ELI WHITNEY
 - TEXAS

BRAIN TEASER ANSWER
THE SAME ANSWER - 313.600

THEN & NOW



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.

ADVANCEMENTS IN THE COTTON INDUSTRY

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

Drones and satellite imagery are used to help cotton farmers monitor soil moisture, crop health, and nutrient levels to allow more accurate decisions to be made for the benefit of the cotton plant.

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.**

FUN FACTS

ONE BALE OF COTTON CAN MAKE



215
JEANS



249
BED SHEETS



690
BATH TOWELS



765
MEN'S DRESS SHIRTS



1,256
PILLOWCASES



3,085
DIAPERS



4,321
MID-CALF SOCKS



1,217
MEN'S T-SHIRTS



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, 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 **12 to 16 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

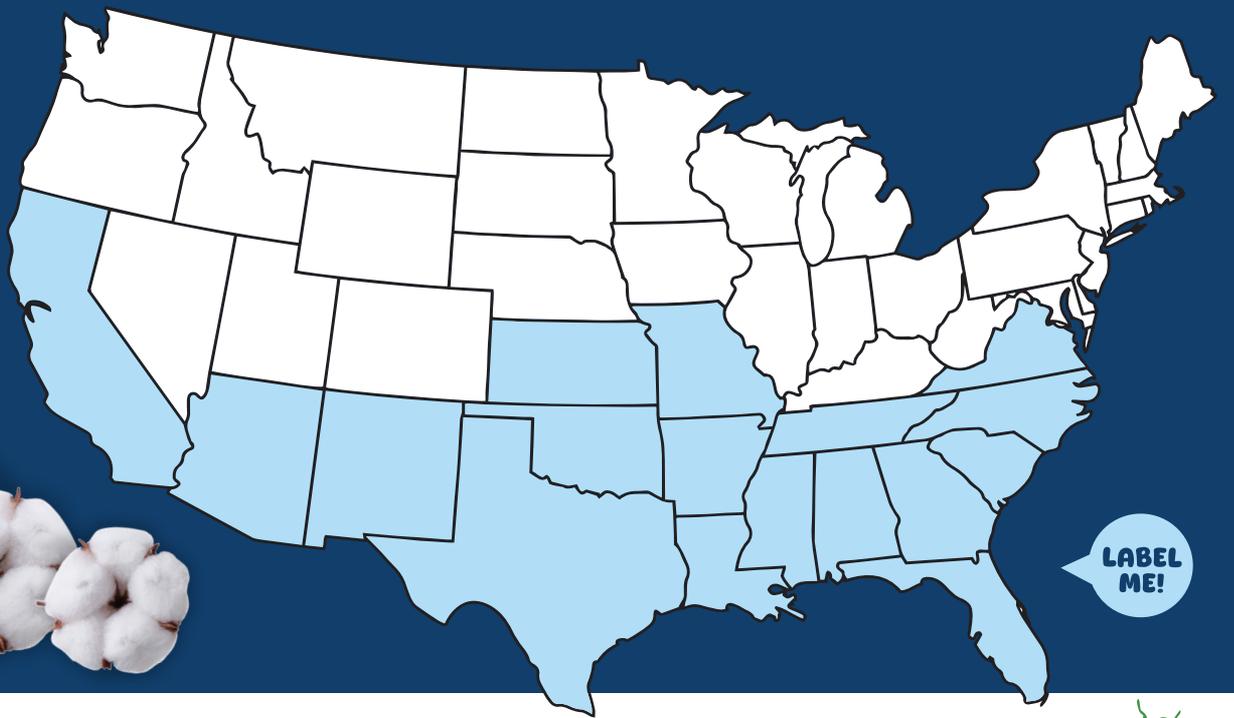
Answer on page 1

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

TOP COTTON-PRODUCING STATES

Can you label the states?

Alabama	Louisiana	Tennessee
Arizona	Mississippi	Texas
Arkansas	Missouri	Virginia
California	New Mexico	
Florida	North Carolina	
Georgia	Oklahoma	
Kansas	South Carolina	



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 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.

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.

COTTON BY-PRODUCTS

There are **3** primary products derived from cotton production: cotton lint, linters, and cottonseed.



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



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



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.



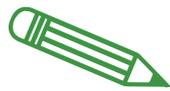
Oil: The oil is the cottonseed's most valuable by-product. It is obtained by crushing the cottonseed kernel. Cottonseed oil is used in cooking oil, salad dressing, soaps, cosmetics, and in preparation of snack foods like chips, crackers, and cookies.

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, as well as natural fertilizer for lawns, gardens, and flower beds.



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

COTTON CROSSWORD



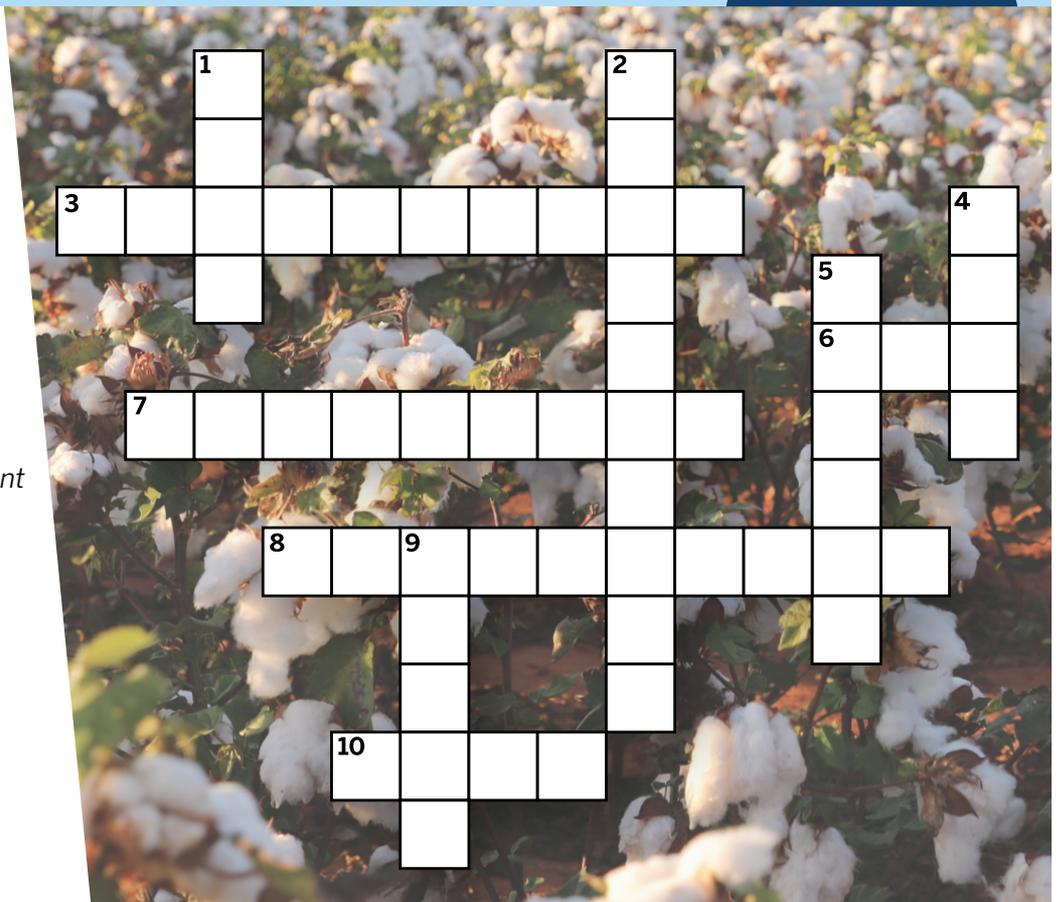
Answers on page 1

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 cottonseed
- 5 Storage for harvested cotton before going to the gin
- 9 This state is number one in the production of cotton



COTTON PATCH SCRAMBLE

Answers on page 1

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



1. sohe tssgrin



2. tetoohatsp



3. hrdate



4. okignoc loi



5. koltevics fede



6. ldroal blii



7. cilaleowpss



Produced by:
Texas Farm Bureau
P.O. Box 2689
Waco, TX 76702-2689
254.772.3030
www.texasfarmbureau.org/aitc

To order additional copies,
send an email to edoutreach@txfb.org.

(7-2024)