

MATHS AND AGRICULTURE

STEM CHALLENGE

A PIEFA MEMBERS COLLABORATION



FOR
YEAR 3/4

COTTON AUSTRALIA
ALL ABOUT COTTON



TEACHER OVERVIEW

ALL ABOUT COTTON MATHS CHALLENGE

Year: Three and Four

Outcomes:

Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA059).

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMNA069).

Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (ACMNA050).

Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (ACMSP096).

Introduction for students:

Cotton is a fibre used to produce many items used in our daily lives. Cotton is grown predominantly in New South Wales and parts of Queensland, although a small amount of cotton is also grown in the northern parts of Victoria. In a good season, Australia is the world's third-largest cotton exporter. To learn more about cotton, check out the [Cotton Australia website](#).

Task:

1. Show the 'introduction for students' on a projector or interactive whiteboard, reading the information as a class.
2. Model completing the first question on the 'Calculating Change with Cotton' worksheet.
3. Allow students to work independently to complete the remaining calculating change challenges. *(Provide students requiring additional support with concrete materials such as artificial coins and notes to aid with this activity.)*
4. Model creating a column graph, highlighting the features including: a title, axis labels, a scale increasing by equal amounts from the bottom to the top of the Y axis, and columns representing the different categories.
5. Allow students to work independently to create their own column graph using the template on page 3.

ALL ABOUT COTTON MATHS CHALLENGE

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To learn more about cotton check out the [Cotton Australia website](https://cottonaustralia.com.au).

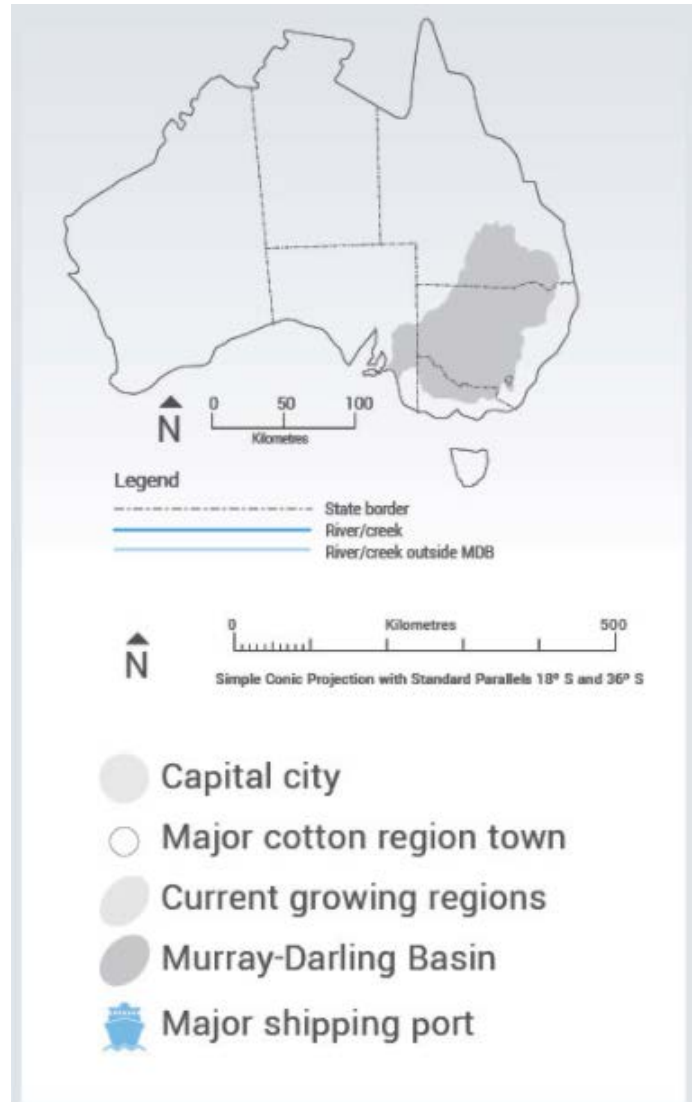


Image Source: Cotton Australia, Where is Cotton Grown, 2021
URL: <https://cottonaustralia.com.au/where-is-cotton-grown>



TEACHER OVERVIEW
ALL ABOUT COTTON
MATHS CHALLENGE

ANSWERS

Page 1:

- a. \$24.50
- b. 40 c
- c. \$1.75
- d. \$5.10
- e. \$9.65
- f. \$4.20
- g. \$52.80
- h. 30 c

Page 2:

- a. 227000 grams
- b. 6000
- c. 750

CALCULATING CHANGE WITH COTTON

Cotton is an amazingly versatile plant. It is grown as both a food and fibre crop. It can be used to make many of the household items we use in our daily lives, including clothes, industrial products and homewares, as well as feed for stock on farms. Each of the items below is made from cotton.

Can you calculate the amount of change you would receive for each of these purchases?

a.



Cotton T-shirt

You Pay:



Change Received:

b.



Cotton Tips

You Pay:



Change Received:

c.



Cotton socks

You Pay:



Change Received:

d.



Nappies

You Pay:



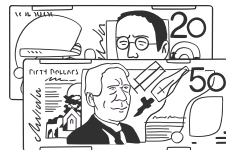
Change Received:

e.



Cotton Sheets

You Pay:



Change Received:

f.



Cotton Shorts

You Pay:



Change Received:

g.



Jeans

You Pay:



Change Received:

h.



Cotton Tote Bag

You Pay:



Change Received:

COTTON COLUMN GRAPH

Use the data below to create a Column Graph on page 3 displaying the amount of each item that can be produced using one 227kg bale of cotton

One 227kg bale of cotton can produce one of the below items



2,100 pairs of boxer shorts



3,000 nappies



215 pairs of jeans



1,200 t-shirts



4,300 pairs of socks



250 single bed sheets



Image Source: Cotton Activities for Primary Students at Home, Cotton Australia.

URL: <https://cottonaustralia.com.au/assets/general/Education-resources/CA-resources/Cotton-activities-for-primary-students-at-home.pdf>

a. How many grams would One 227kg bale of cotton weigh?

b. How many nappies could be produced using two 227kg bales of cotton?

c. How many single bed sheets could be produced using three 227kg bales of cotton?