

# Cotton activities for primary school students

Hands on STEM ideas with Australian Curriculum links

## Stage One Years 1-2

- Cotton Hunt
- The Cotton Plant

## Stage Two Years 3-4

- Bug Check
- Picking Season

## Stage Three Years 5-6

- Cotton Farm Model
- Properties of Cotton

# Quick Cotton Facts

We sleep in it, dry ourselves with it, wrap our bodies in it and we even cook with its oil.

- Cotton is a natural fibre that grows on a plant.
- Cotton is an ideal crop for Australian conditions because it's only grown when there's water available.
- Approximately 90% of Australia's cotton businesses are family farms, producing about 80% of the crop.
- Cotton can absorb up to 27-times its own weight in water.
- Australian cotton farmers use fewer natural resources than ever before to produce an environmentally sustainable crop.

Where is  
*Cotton* grown?



Approximately  
66% of Australia's  
cotton is grown  
in NSW and 33%  
in Queensland.



COTTON  
AUSTRALIA



# How does our cotton grow?



<https://www.youtube.com/watch?v=fzLqkaou6JI>

Duration: 6 minutes

Description: A visual guide to how irrigated cotton growers from Mungindi in NSW grow cotton over one season, from preparing the soil to harvesting the crop.

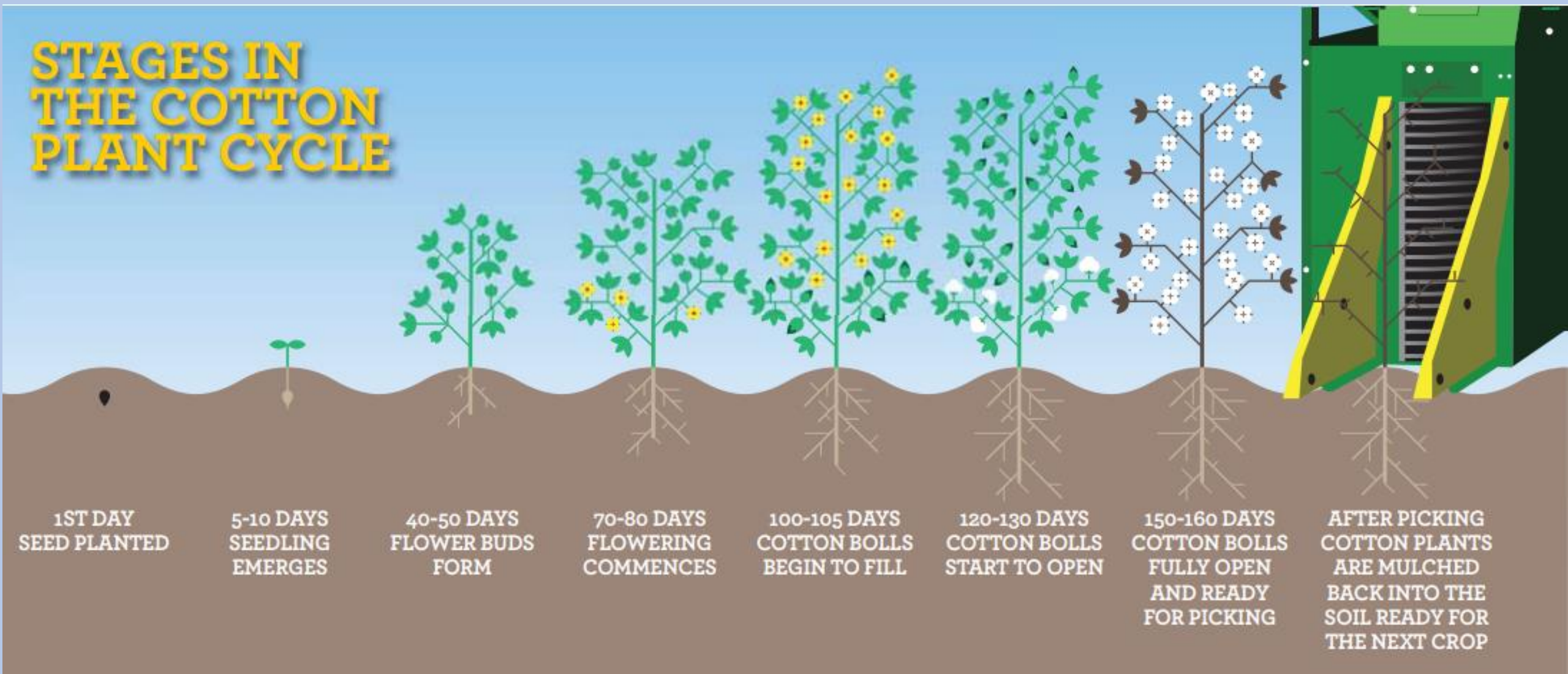


[https://www.primezone.edu.au/item\\_details.php?item\\_id=594&item\\_type=resource&content\\_list\\_id=5](https://www.primezone.edu.au/item_details.php?item_id=594&item_type=resource&content_list_id=5)

Duration: 4.5 minutes

Description: You will meet cotton grower Daniel Kahl from Wee Waa in NSW who talks about how cotton is grown. You will also meet John O'Connor from Australian Textiles Mills to share how towels are made in Australia.

# STAGES IN THE COTTON PLANT CYCLE







<https://cottonaustralia.com.au/assets/general/Education-resources/Posters/Field-to-Fashion-Primary-poster-ONLINE.pdf>

The cotton production cycle starts with a grower preparing the soil before planting cotton seeds. The farmer then cares for the plants over summer and harvests the cotton in autumn. But that's just the beginning of the cotton story. The farmer delivers round cotton modules to the cotton gin nearest their property. At the cotton gin, the cotton lint is removed from the seeds and baled to be exported overseas where most Australian cotton is further processed into yarn. Yarn is then bought for manufacturers to make into all sorts of cotton products that we use in our daily lives.

# 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





## PRODUCTS MADE FROM COTTON LINT/FIBRE

- Cotton lint is spun then woven or knitted into fabrics such as velvet, corduroy, chambray, velour, jersey and flannel
- About 60% of the world's total cotton harvest is used to make clothing, with the rest used in home furnishings and industrial products
- Well known cotton products include denim jeans, socks, towels, t-shirts, bed sheets and underwear
- More unusual uses of cotton fibre include tents, car tyre cord, fishnets and book binding



## PRODUCTS MADE FROM COTTON SEED

- Over half the weight of unprocessed cotton (seed cotton) is made up of seed, a valuable by-product of fibre production
- One tonne of cottonseed yields approximately 200kg of oil, 500kg of cottonseed meal and 300kg of hulls
- Global cottonseed production can potentially provide the protein requirements for half a billion people per year and many billions of other animals
- The most common uses of cottonseed are oil for cooking and feed for livestock. Cottonseed is pressed to make cottonseed oil. Cottonseed can be made into a meal and is a popular feed for cattle and livestock as it's a great source of energy
- Cottonseed oil can also be used in a range of industrial products such as soap, margarine, emulsifiers, cosmetics, pharmaceuticals, rubber, paint, water proofing and candles
- Cottonseed oil is cholesterol free, high in poly-unsaturated fats and contains high levels of anti oxidants (vitamin E) that contribute to its long shelf life



## PRODUCTS MADE FROM COTTON LINERS

- Cotton liners are fine, very short fibres that remain on the cottonseed after ginning. They are curly fibres typically less than 3mm long
- Linters are used in the manufacture of paper (such as archival paper and bank notes) and as a raw material in the manufacture of cellulose plastics
- Linters are commonly used for medical supplies such as bandages, cotton buds, cotton balls and x-rays





# Stage One Activity 1: Years 1-2

## Cotton Hunt

Students will research and record all the different items in their home that is made from cotton.

- Discuss with students that they will find cotton in t-shirts, underwear, bedsheets, towels and lots of other places. People like clothes and furnishings that are made from natural fibres like cotton because it's soft on our skin and can soak up water to keep us dry.
- Watch the video titled The Australian Cotton Story and discuss. Establish that cotton is grown on a plant and made into many products. Next read the EnviroStory Farmer Jack's Cotton online to learn more about the many items that are made from cotton.
- The first activity is to list all the different items in the house that is made from cotton. To check if something is made of cotton, look at labels on t-shirts, shirts, dresses or tea towels as they generally have labels still intact.
- To make the list, students can choose to clip art digitally, photograph, draw or write the name of each item. If you have old magazines or newspapers, this makes a good cut and paste activity as it is easy to find examples of cotton in most publications.
- The second activity is discovering which item made from cotton is most likely to be found in the home. Do you have more t-shirts or towels? More dresses than sheets?
- Students choose two or more cotton items to count, record and analyse the data to find the answer. You can limit the cotton hunt to one or more rooms in the house.
- Guide students to record the data they collect using tally marks. If they need more support use counting blocks or colouring squares on grid paper.
- Discuss using a symbol to represent several items as shown in the picture graph opposite and then ask them to create one simple symbol to use in their table. Guide students to draw up the table to record their findings. Check they have included a heading and added the key.
- Work with students about what the table shows. Have them write down the answers to questions like 'are there more t-shirts or towels in our house?' or write their finding as statements like 'there are less t-towels than sheets in our house?'.
- Assessment should focus on how well the students recorded their data and if they have demonstrated an understanding of using a key to show several items can be represented using one symbol.

**Australian Curriculum Outcomes**  
**Mathematics; Statistics and Probability** (data representation and interpretation).

**Year 1:** Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays ACMSP263.

**Year 2:** Create displays of data using lists, table and picture graphs and interpret them ACMSP050

### Resources and Materials

- Cotton products found at home
- Paper and coloured pencils
- Newspaper/magazines (optional)

### Language/Vocabulary

Cotton, fabric, cloth, symbol, tally mark, picture graph, equal spacing, key

### Extension Question

Interview family to find out if they like wearing cotton clothes and why.

### Web Links

The Australian Cotton Story:

<https://www.youtube.com/watch?v=cbKh1Xtfmao&t=1s>

EnviroStories - Farmer Jack's Cotton:

<https://www.envirostories.com.au/farmer-jacks-cotton/>

### picture graphs

A picture graph is a statistical graph for organising and displaying categorical data.

#### Ball sports played by students in Year 4

Football	⚽ ⚽ ⚽ ⚽
Basketball	🏀 🏀 🏀
Netball	🏐 🏐 🏐 🏐 🏐
Soccer	⚽ ⚽
Rugby	🏉 🏉 🏉
Hockey	🏒 🏒

Key ⚽ = 10 Students

### Tally Marks

||| represents 3,

|||| represents 5,

||||| represents 9.

# Stage One Activity 1: Years 1-2

## Cotton Hunt

**Hints & Tips:** It is good to think about some guidance in this activity to ensure little hands do not pull everything out of the wardrobe or a linen press!

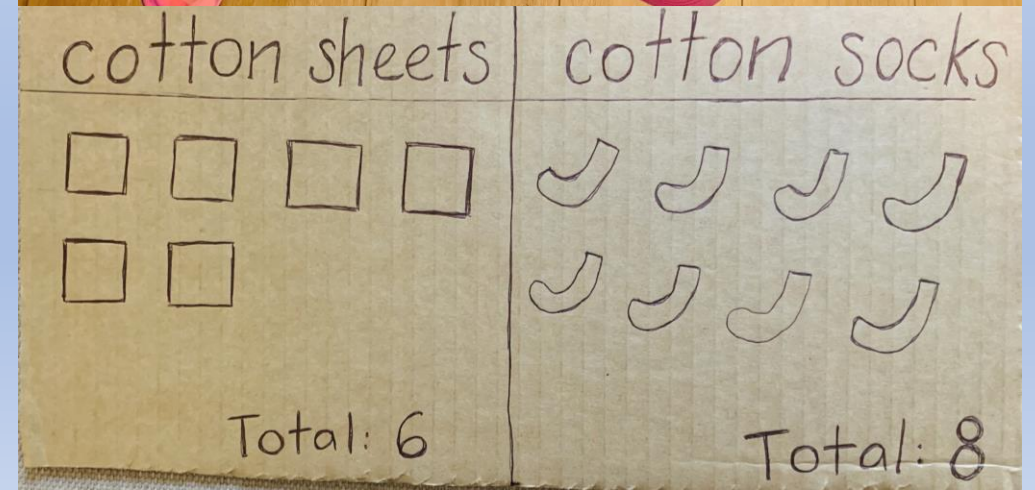
It is good to look at labels on clothes to check if it is 100% cotton or a cotton blend with some other fibres.

The bathroom is often a good place to find cotton products like towels, cotton buds and cotton face wipes.

Don't forget home furnishings such as curtains, cushions, lounge coverings and tablecloths that are often made from cotton.

Also, keep an eye out for more unusual items made from cotton, such as beauty products and some cooking oils.

Photography is a great way to record cotton items in the home and provides good use of technology.





# Stage One Activity 2: Years 1-2

## The Cotton Plant

Students will identify common features of plants such as leaves and roots and investigate the life cycle of a cotton plant by recognising that living things have predictable characteristics at different stages of development.

- View the video titled, The Australian Cotton Story to establish that cotton is grown on a plant and needs sunshine, rain, soil and time to grow. Students then read Cotton on Koramba online, written by primary school children who live on a cotton farm and talk about the life of a cotton seed.
- To reinforce the concept that cotton is grown on plants, students collect leaves, twigs and some plant roots and white flowers to demonstrate their understanding of the structural elements of a cotton plant.
- Guide students to examine images of the cotton plant before collection so they can try to find leaves that are like cotton leaves in shape and colour, and twigs that match in size. The cotton plant has a long taproot. A taproot system has one thick main root growing down from the plant's stem, and lots of smaller secondary roots branching off from this. Often, we eat taproots like carrots. The common garden weed dandelions have taproots and would be a perfect example.
- Students construct their 'scientific model' using their found items and use cotton balls to mimic open cotton bolls.
- Note that each cotton boll has a leaf opposite it and this leaf provides the energy and nutrients such as the leaf catching the energy from the sun and drawing up nutrients from the soil.
- Guide students to label their model showing where the stem, leaves, roots, flowers and cotton bolls are on the plant. To demonstrate the needs of the plant, add in the sun, a rain cloud and the soil, and remember to also label these.
- Once complete, challenge students to create other models to show the different life stages of the cotton plant. From a small seedling with only two small leaves and short tap root, to an immature cotton plant about two months old, just as the first flowers start to appear.
- Assessment should focus on how well students have understood that cotton plants are living things, identified external features and labeled their project.

### Australian Curriculum Outcomes

**Science Understanding:** Biological Sciences

**Year 1:** Living things have a variety of external features ACSSU017; Living things live in different places where their needs are met ACSSU211

**Year 2:** Science Understanding: Biological Sciences. Living things grow, change and have offspring similar to themselves ACSSU030

### Resources and Materials

- Cotton balls
- Leaves, twigs and roots
- Cardboard (glue or sticky tape optional)

### Language/Vocabulary

Stem, leaf, tap root, boll, seed

### Extension Question/s

Why does a white cotton flower turn pink? How tall does a cotton plant grow?

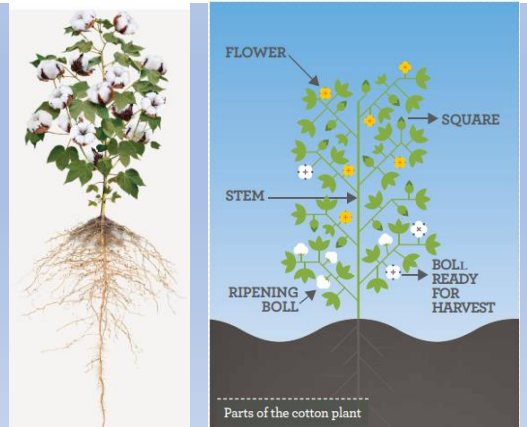
### Web Links

The Australian Cotton Story:

<https://www.youtube.com/watch?v=cbKh1Xtfmao&t=1s>

Cotton on Koramba:

<https://www.envirostories.com.au/2012003-cotton-on-koramba/>



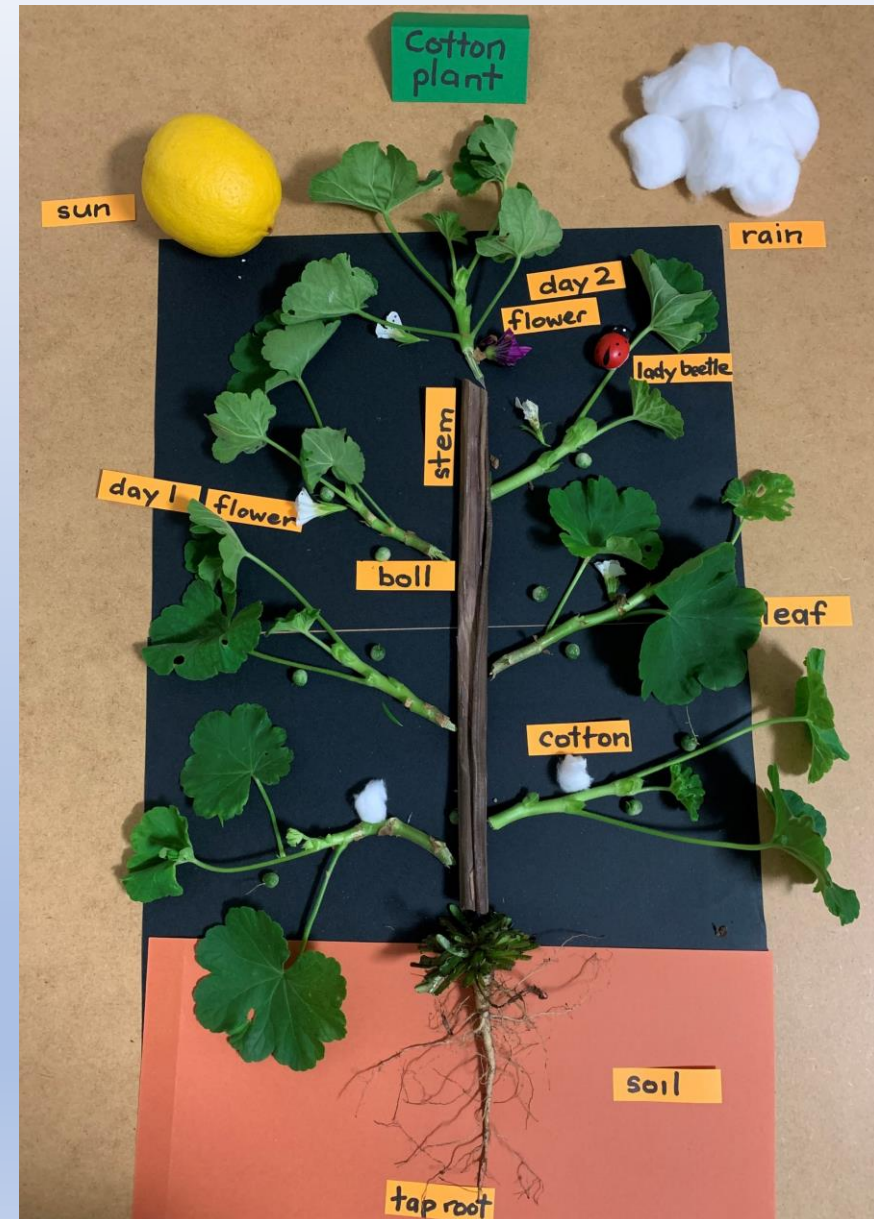
# Stage One Activity 2: Years 1-2

## The Cotton Plant

**Hints & Tips:** In this activity, less is more. In the image opposite, there are about 20 geranium leaves, 10 berries from an asparagus plant, four little white flowers and one little purple daisy with its petals cut off to make the scale of the flower fit with everything else. The tap root is from a dandelion and to keep the fresh theme, a lemon has been used to represent the sun. Cotton balls are good to represent rain.

We also found a little wooden lady beetle that adds another aspect of growing cotton by showing one of the 'good bugs' commonly found on a cotton plant.

No glue has been used as a photo is enough to tell the story and a great way to assess the finished task.





# Stage Two Activity 1: Years 3-4

## Bug Check

Students will complete field work in the garden to investigate insects and distinguish between living and non-living things.

- Introduce the activity by viewing the Visual Story of Cotton and establish cotton is grown on a plant that is cared for by farmers in Australia before being made into clothing and other products. One of the ways farmers care for their plants is by making sure there are enough 'good bugs' to eat the 'bad bugs' who eat their crops.
- To collect insects, go to a bush and lay a sheet under the bush.
- Gently shake the bush and some insects may fall onto the sheet.
- Look to find insects on the sheet (or under plant leaves) and capture into a clear container. If possible, capture 2-3 types of insects and put in separate containers.
- Once insects are collected, sort anything left on the sheet into groups of their choosing. Ask 'Is it alive?', 'Was it ever alive?' Students draw their findings under two headings: living and non-living. Discuss their findings. Hint: if it was ever alive, it is still classified as a living thing even when it is removed from the plant.
- Students then observe the insect/s and draw what they can see. Use the links provided to help identify the name of the insect/s. Discuss the observable features of each insect and choose one insect to label its body parts. Use the labelled image of a lady beetle as an example.
- Once complete, students release the insect/s back to the same plant where they captured it.
- Discuss and research what each insect feeds on to survive. Research good bugs verses bad bugs in your own garden and then extend this to think about how farmers need good bugs to eat the bad bugs, so they have a quality crop at harvest time. Limit your research to one 'good' bug and one 'bad' bug. The following are the main insects that affect cotton production (bad bugs), requiring control measures in most regions in most seasons: heliothis caterpillar, green mirid, two spotted mite, cotton aphid, whitefly and mealy bugs. The control of bad bugs relies on some of these good bugs: ants, earwig, lady beetle, lacewing and spiders.
- Students then research the life cycle of a lady beetle and either draw and label each stage or write a little story book about the life of a lady beetle in a cotton farm to read to a family member.
- Extension: From the UNE Discovery Centre - Meet Benny the Beneficial and make your own insect <https://www.unediscoveryvoyager.org.au/2020/03/26/meet-benny-the-beneficial-and-make-your-own-insect/>
- Assessment should focus on student's understanding of an insect's life cycle and how well the student has identified the insect's features and labelled their work.

### Australian Curriculum Outcomes

**Science Understanding:** Biological Sciences

**Year 3:** Living things can be grouped on the basis of observable features and can be distinguished from non-living things ACSSU044

**Year 4:** Living things have life cycles ACSSU072

### Resources and Materials

- Sheet
- Bug boxes (clear containers)
- Paper & pencil
- Magnifying glass (optional)

### Language/Vocabulary

Bug, insect, beetle, moth, caterpillar

### Extension Question

Why are lady beetles good bugs to have in a cotton crop or your vegetable garden?

### Web Links

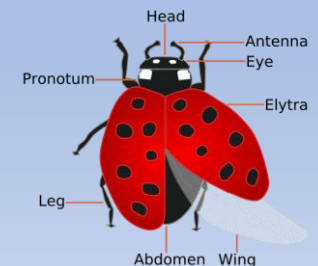
Visual Story of Cotton:

<https://prezi.com/tzriuk06rqih/visual-story-of-cotton/>

Pests and Beneficial's in Cotton:

<https://www.cottoninfo.com.au/sites/default/files/documents/P%26Bs%202016%20reprint%20LR.pdf>

Good Bugs Bad Bugs: <https://thebeatsheet.com.au/wp-content/uploads/2012/04/GoodBadBug-FINALscreen22Feb3.pdf>



# Stage Two Activity 1: Years 3-4

## Bug Check

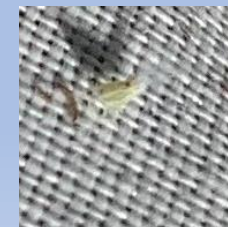
**Hints & Tips:** Any bush or small tree will work for this activity. Once you have placed the 'beat-sheet' under the bush and given it a shake, you will at first see twigs and leaves.

To start with you may not see any bugs or insects.

Sit for a minute and observe closely. Eventually you will see movement of tiny little specks and at closer inspection you will start to see lots of bugs and insects.

In the four images below the beat-sheet photo you can see we found red spider mites, ants, spiders and a white fly.

We also observed flies and a moth fly away while we were shaking the bush.





# Stage Two Activity 2: Years 3-4

## Picking Season

Students will investigate how the cotton plant changes over time to produce the cotton fibre that is used in clothing. From their research they will create a calendar of events for a farmer in a typical growing season in NSW.

- View the Visual Story of Cotton and click through to see images that show all the different stages of growth for a cotton plant. Visit the CottonInfo website and take note of the seasonal calendar on their home page and the activities that are typically performed in each of the four seasons on a cotton farm.
- Brainstorm design ideas such as the Months and Seasons image to the right to record your research about on-farm activities that would typically happen in each season. Students can choose to do this digitally or make a poster.
- Research the life cycle of a cotton plant, taking notes as you go. Include images & drawings of each stage of the cycle to include in your calendar. Follow the website link to Cotton Australia for an overview of how cotton is grown. There is extra useful information in the EnviroStories online book, From the Seed to the Selling. This was written in 2019 by Primary Students in Hay NSW and gives a great overview of the entire cotton industry.
- Once you have the basic facts of the seasons that cotton is planted, grown and picked, add in other details such as: how tall the plant will be at each stage, the steps between the first square appearing to producing an open boll and note at what stages the crop will need watering or feeding with nutrients. Remember some of this activity will happen before the cotton seed is planted in the soil. Add illustrations to show more detail and demonstrate your understanding of each stage/activity.
- Include the ginning process that happens during autumn and into winter off-farm at the cotton gin. At the cotton gin, the cotton lint is separated from the cotton seed and any other twigs or leaves are removed. Cotton lint is baled ready for shipping overseas to be turned into yarn. The cotton seed and other 'trash' is all reused. The seed can be fed to cattle as feed as well as being used again to plant and produce another cotton plant in the next season. The 'trash' is mainly used as compost.
- Think about how cotton is a plant and a living thing when growing. Does this change once the cotton is picked and sent to the cotton gin for further processing? Have students draw cotton lint, cotton seed and cotton trash and give a scientific description determining if it is living or non-living. Use factual language not expressive or creative language to describe things. Note: in science living is used to describe anything that is or has ever been alive (e.g. dog, flower, seed or a log) whereas non-living is used to describe anything that is not now nor has ever been alive (e.g. rock, mountain, glass, watch).
- Assessment should focus on students understanding of living and non-living things and how well they articulated this in their calendar and scientific descriptions.

### Australian Curriculum Outcomes

**Science Understanding:** Biological Sciences

**Year 3:** Living things can be grouped on the basis of observable features and can be distinguished from non-living things ACSSU044

**Year 4:** Living things have life cycles ACSSU072

### Resources and Materials

- Cotton products found at home
- Paper and coloured pencils

### Language/Vocabulary

Cotton, fabric, cloth

### Extension Question

Investigate the circular economy and create an infographic showing the life cycle of a t-shirt.

### Web Links

Visual Story of Cotton:

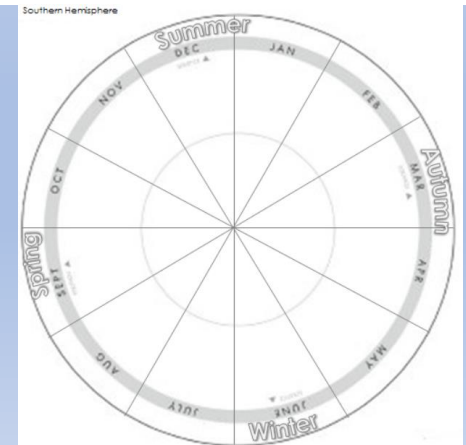
<https://prezi.com/tzrjuk06rqih/visual-story-of-cotton/>

CottonInfo: <https://www.cottoninfo.com.au/>

Cotton Australia: <https://cottonaustralia.com.au/how-is-cotton-grown>

EnviroStories - From the Seed to the Selling:

<https://www.envirostories.com.au/cottons-life-in-hay/>

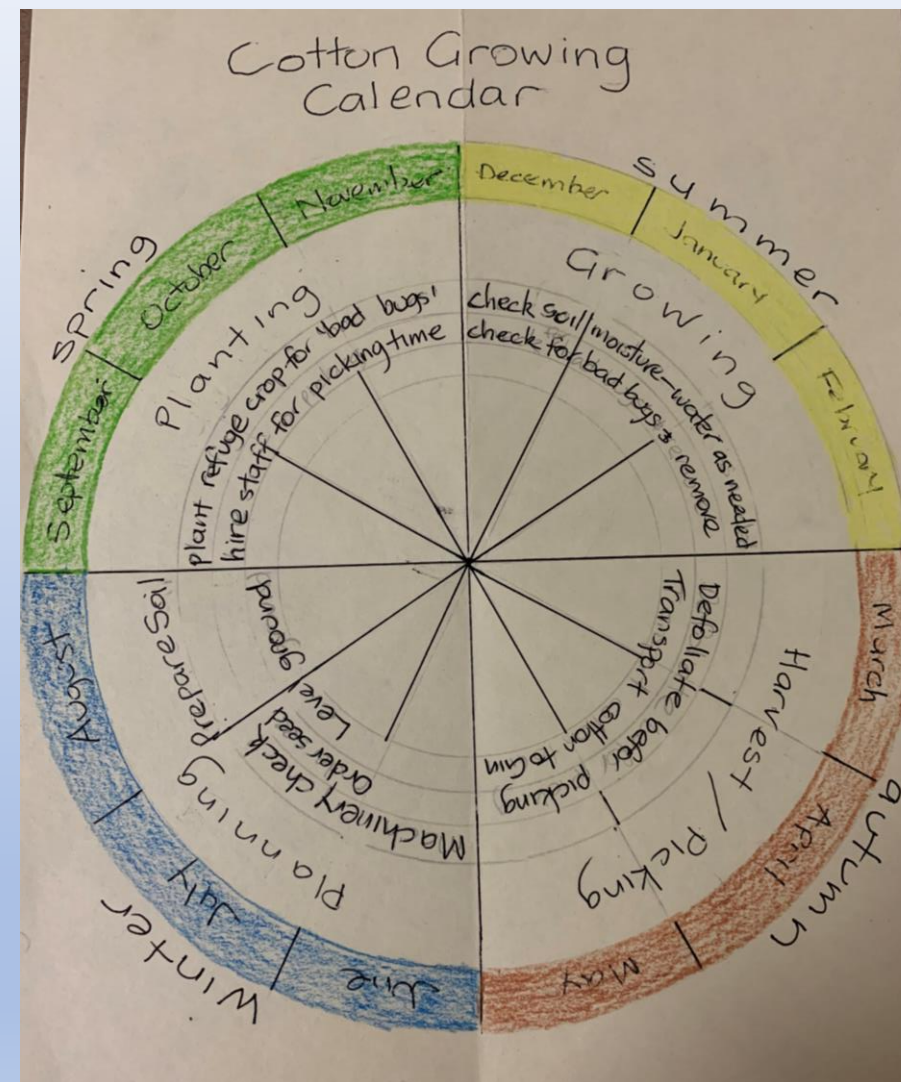
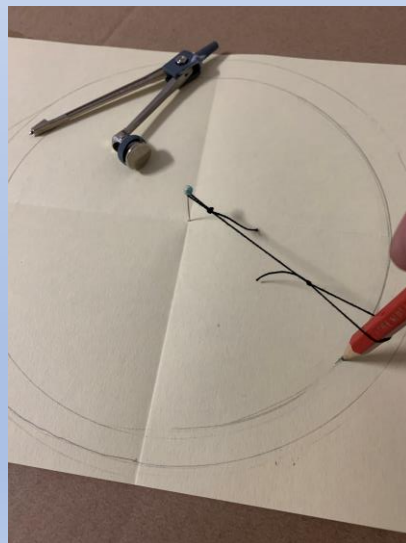


# Stage Two Activity 2: Years 3-4

## Picking Season

**Hints & Tips:** To construct a circular calendar, fold a piece of paper into quarters to locate the center of the page. Use a pencil to draw circles. If you do not have a protractor, use the handy tip as shown in the image below. This method needs something like a cardboard box for the pin to be pushed into to hold the string as shown.

Add in colour and draw some pictures once all your information has been recorded.





# Stage Three Activity 1: Years 5-6

## Cotton Farm Model

Students will investigate common elements on a cotton farm as a managed environment with a focus on technology and delivering water to an irrigated crop. Students will then design and create a model to demonstrate their understanding of these systems.

- Cotton takes about six months to grow from seed to picking and farmers only grow cotton when there is enough water available. Cotton farmers are generally mixed farmers which means they grow other crops on their farms besides cotton. These crops are grown in rotation, this means the farmer plans which crops will follow each season to keep the soil healthy and break the cycle of pests and diseases. Cotton farmers will often stock livestock such as beef cattle and will always have an area set aside for native vegetation.
- To familiarise students with some different areas of a cotton farm, go to the Finding Farms link and work through the mapping questions to locate dryland and irrigated cotton, native vegetation and other natural and man-made elements.
- There are two types of cotton farming in Australia, irrigated and dryland (rain-grown cotton). Students investigate irrigated cotton farming that uses a series of dams, channels and syphons and other surface irrigation systems to deliver water to the growing crop. View The Water Cycle. Study the table on page 16 and students construct their own table to show how they use water wisely at home. For a bit of fun, view the video, Starting Syphons. With supervision by an adult, use a length of hose and a bucket of water (or something similar) to experiment and hopefully master how to start a syphon. Discuss how this action can make water 'go up hill'.
- Students research the variety of technology used on a cotton farm. Students view Australian Cotton and the Digital Agriculture Revolution online. Create a list of each item of technology and write a sentence to explain what it is used for and list some benefits for its use. Drones are used to inspect the cotton crop using an on-board camera – this saves the farmer having to walk along all the rows of cotton. Farmers can also use drones to release beneficial insects (good bugs) across their crop to limit the amount of chemicals used to protect the crop making it more sustainable.
- Students then draw and label a detailed plan to show how their model will look and note where to place the elements that need to be included to demonstrate how cotton is grown and some of the technology used on cotton farms to grow a quality, sustainable crop.
- Brainstorm ideas about what resources to use to construct the cotton farm model. This will be different for everyone. Consider using fabric scraps and objects found around the home to represent different crops, animals, buildings, native vegetation and don't forget the dams, channels and technology such as machinery, solar panels, soil moisture sensors and drones. For the adventurer, this could be done outside in a tray with soil and objects found, however, this is far more challenging. An outdoor model could include using some plastic to line a dam and channels to add in water and ensure it does not seep away. This is something that cotton farmers do to help save water on farm. Do not use plastic between the rows of cotton as this would stop the plants receiving the water.
- Take time to construct the cotton farm model to make this as detailed as possible. Once complete, students go back to their detailed plan and document what they had to change and why. To conclude, students write a response to the question 'Why do farmers use technology and how does this help them grow more sustainable crops?'.
- Assessment should focus on student's understanding of how and why technology is used on farms to be more sustainable and their explanation of what they had to change from their original plan after construction and the reasons behind this.

### Australian Curriculum Outcomes

#### Design and Technologies.

**Year 5:** Knowledge & Understanding - Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy ACTDEK021. Processes and Production Skills – Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques ACTDEP025

**Year 6:** Knowledge & Understanding - Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy ACTDEK021.

Processes and Production Skills – Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions ACTDEP026

### Resources and Materials

- Art and craft supplies
- PVC glue or hot glue gun (adult supervision)
- Found object to represent elements of a farm

### Language/Vocabulary

Irrigation, dryland, technology, native vegetation

### Extension Question

How does native vegetation help farmers?

### Web Links

Finding Farms (page 31-32):

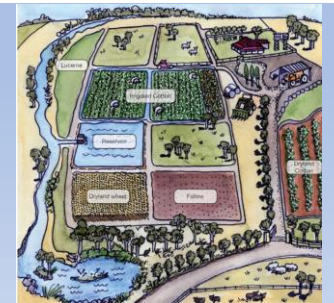
<https://www.primezone.edu.au/resources/pdf/8.%20findingfarms.pdf>

The Water Cycle (and Starting Syphons):

<https://cottonaustralia.com.au/assets/general/Education-resources/CA-resources/Primary/Water-and-Irrigation-Technology-on-a-Cotton-Farm-in-Central-Queensland.pdf>

Australian Cotton and the Digital Agriculture

Revolution: <https://artsandculture.google.com/exhibit/australian-cotton-and-the-digital-agriculture-revolution%3C2%A0-cotton-australia/OwLSYjWkhhbKw?hl=en>





# Stage Three Activity 1: Years 5-6 (continued)

## Sample Cotton Farm Model with Labels



**Tips:** One of the hidden challenges is to get the scale right. Before attaching any items onto a base board (cardboard box works well), gather and assemble items to check the scale works and alter as necessary. If using a hot glue gun, ensure an adult is supervising.



# Stage Three Activity 2: Years 5 & 6

## Properties of Cotton

Students will research the properties of cotton and other fabric products from a variety of sources. Students conduct an experiment to test the claim that cotton fibres can hold water up to 27-times its own weight and compare their results against other fabric types to discover which is the most absorbent.

- View the Visual Story of Cotton online to review the process of producing cotton fabric from dirt to shirt and research the uses of cotton to explore why cotton is used in a variety of clothing, furnishings and medical supplies. Choose one cotton item from each of the above categories and write a sentence for each to show student's understanding of the cotton fabric property that makes it ideal for each use.
- Investigate one common claim about how much water cotton can hold. This is referred to as the absorbency of cotton. It is often claimed that cotton can absorb up to 27 times its own weight in water. Students think about this claim and write down if they believe the claim to be correct. Will the claim be true, or do you think it may depend on the fabric?
- Students conduct a scientific investigation to test the claim about cotton absorbency. Students gather samples of cotton and kitchen equipment. Ensure there is adult supervision before starting this experiment so the cotton samples you have collected are ok to use and they can use the kitchen equipment, as well as checking it is being used in a safe manner.
- Weigh and record the weight of each sample. Students could take photos of each step for their final report.
- Add food dye to cold water in a jug. This dye will help to see that the sample is fully saturated. Place one cotton sample at a time into a glass bowl and pour coloured water over it until saturated. Lift into the kitchen strainer and allow to drain over bowl.
- Once no more drops are seen falling from the strainer, weigh and record the weight of the saturated cotton sample and record its new weight. Repeat for each cotton sample. Clean your work area before moving on.
- Students now have two sets of data to analyse. Calculate the amount of water that the fabric has absorbed. Remember to list this as millilitres as opposed to grams for the fabric.
- Compare your against your prediction. Does cotton hold up to 27 times its own weight? How does this compare when using different types of cotton fabric or fabrics from other sources? Be sure to state if the original claim is true or false and comment on any variation giving reasons why it was different.
- NOTE: Cotton fibres are often quite water repellent. You can buy both absorbent and non-absorbent cotton wool, although the latter can be harder to find. An **absorbent cotton** is obtained after the removal of the natural wax from the fibres whereas a **non-absorbent cotton** is made of pure cotton yarn through high temperature and pressure. An **absorbent cotton** sinks in water but a **non-absorbent cotton** floats on the water because of its fatty substance. Linters are the very short fibres that remain on the cottonseed after ginning, and are used to produce goods such as bandages, swabs, bank notes, cotton buds and x-rays.

### Australian Curriculum Outcomes

**Science Inquiry Skills:** Planning and Conducting.  
**Year 5:** Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks ACSIS086  
**Year 6:** Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials ACSIS103

### Resources and Materials

- Measuring scales (kitchen)
- Cotton products; tea towel, cotton wool, denim, cotton face wipes
- Jug and glass bowl
- Food dye (optional)
- Variety of fabric types (optional)

### Language/Vocabulary

Properties, fibre, absorb, saturate

### Extension Question/s

What is the difference between natural and man-made fibres? Research one man-made fibre to discover where it comes from and how is it made into fabric. Which fibre is most sustainable? Why?

### Extension Investigation

Repeat investigation using the Texta Dot Method:  
<https://www.youtube.com/watch?v=f8FkOEOsXO4>

### Web Links

Visual Story of Cotton:

<https://prezi.com/tzrjuk06rqih/visual-story-of-cotton/>

Uses of Cotton:

<https://cottonaustralia.com.au/uses-of-cotton>

# Stage Three Activity 2: Years 5 & 6

## Properties of Cotton: tips for investigation

Create a digital table to record findings of the experiment.

Item	Pre-weight	Post-weight	Water held by fabric
Terry Towel	100gm	755gm	655ml
Wool	1gm	50gm	49ml
Hessian	5gm	45gm	40ml
Gauze	0gm	25gm	25ml
Cotton Balls	0gm	110gm	110ml
Felt	4gm	60gm	56ml
Sponge	1gm	55gm	54ml



Assemble all equipment, label and photograph for final report



Use coloured dye to better see fabric is fully saturated



Use a strainer to allow all drips to stop before weighing saturated fabric sample





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Cotton Australia: <https://cottonaustralia.com.au/>

#DiscoverAussieCotton