



Department of  
Primary Industries

# Belgenny Creamery Education resources



NSW Department of Primary Industries Schools Program  
[www.belgennyfarm.com.au/schools/creamery](http://www.belgennyfarm.com.au/schools/creamery)  
Email: [schools.program@dpi.nsw.gov.au](mailto:schools.program@dpi.nsw.gov.au)



Safe food starts in the paddock and ends on  
your plate

Lead author: Jo Hathway (Project Officer, Education, NSW DPI Tocal)

Editors, advisors and co-authors: Jess Fedorow (Project Officer, Education, NSW DPI Orange) and Michelle Fifield (Education Officer, Schools, NSW DPI Orange).

Design and illustration: Jessica Green (Digital Media and Design Officer, NSW DPI Tocal)

### ***Acknowledgements***

The Belgenny Creamery education resources are an initiative of the NSW Department of Primary Industries Schools Program and have been developed in consultation with the Belgenny Farm Trust and the NSW Department of Education.

We would like to acknowledge and sincerely thank Cameron Archer and Brian Walsh for their exhaustive research and advice regarding Belgenny Farm and Macarthur history at Camden. We would also like acknowledge and thank Tanya Coli and Erica Pizzolato (NSW Department of Education) for their assistance and advice in the development of the learning experiences.

### ***Disclaimer***

The information in this document is based on knowledge and understanding at the time of writing (January 2016).

### ***Copyright***

© State of NSW through the Department of Industry, Skills and Regional Development 2015, except where indicated otherwise. This work is licensed under a Creative Commons-Attribution-Non Commercial- Share Alike 4.0 International license (<http://creativecommons.org/licenses/by-nc-sa/4.0/>)

Under this license the material is available for free use and adaption. Educators may use, adapt, communicate and republish material from the resource. You must include this statement on any copy or adaption of the material.

# Belgenny Creamery

## Education resources

### Rationale

This series of learning experiences has been developed to support students in either an onsite or online visit to the historic Belgenny Creamery. The underpinning principle of the units is that agriculture is a human pursuit. This is reflected in the overarching message of change as a result of science inquiry and technological design. In these learning experiences students will consider the way that science and technology have changed and improved agriculture over time.

Agriculture is of enormous importance to all our lives. Beginning in ancient times it continues to evolve and incorporate modern technologies and cutting edge research and development. Our connection to the land and an appreciation of how important agriculture is in our lives is not always apparent in student's learning. These units aim to develop an appreciation of what modern agriculture entails from the perspective of one of Australian agriculture's most significant sites—Belgenny Farm.

Each unit focuses on a stage-specific strand of the NSW Science and Technology K-6 syllabus<sup>1</sup> while incorporating understanding and development of knowledge from a number of other learning areas including geography, maths, English and history and incorporating critical and creative thinking.

Note<sup>1</sup>: for teachers outside New South Wales, the Australian Curriculum outcomes are listed in the appendix of each unit.

# Background information for teachers

## The name ‘Belgenny Farm’

In 1805 John Macarthur returned to Sydney from England with orders for a grant of 2023 hectares (5000 acres) of the best pasture land in the colony. This land was granted with the express purpose of establishing a fine wool industry. He chose land in the area known as the Cowpastures—named after a herd of cattle that had thrived there after escaping from Sydney in 1788. John Macarthur named the estate Camden, it was later known as Camden Park, and traded in the dairy industry as Camden Park Estate.

The Dharawal people recorded the arrival of the escaped cattle with charcoal drawings in a rock shelter. The Dharawal have lived in the Belgenny area for many thousands of years; the area was known to them as ‘benkennie’ or ‘binhinny’ meaning the ‘dry land’.

Over the next 200 years the Macarthur estate at Camden grew to its maximum size of 11,210 hectares (27,698 acres) in 1837 and shrunk again (through land sales) until only a 387 hectare (956 acre) lot remains in the family today. At its peak the Camden Park estate included lands of the Gundungarra and the Dharuk people as well as the Dharawal.

In 1984 the NSW State Government purchased 1583 hectares (3912 acres) of the Camden Park Estate from developers. In 1990 the Elizabeth Macarthur Agricultural Institute (EMAI) research facility was opened and the heritage site we know as Belgenny Farm was established. The name being a variation of the name the Dharawal used here.

The property and agricultural endeavours changed and evolved over time to ensure that the estate remained profitable and relevant through changes in the social, economic and industrial landscape in Australia. Throughout these units we will refer to agricultural activities and developments that occurred on the broader Macarthur estates at Camden as being part of Belgenny Farm operations though they may have occurred on land nearby that was part of the estate—we do this to avoid confusion for students.

## The family

Much has been written about John Macarthur; many claims have been made and disputed, and both research and speculation continues. There is no doubt, however, that the Macarthurs have been at the forefront of agricultural development and evolution since the first land grant at Camden in 1805 when John Macarthur chose to focus on sheep breeding for fine wool characteristics rather than the more profitable mutton market. Their progressive approach to wool washing and packing for sale in England (an enterprise ably managed in New South Wales by Elizabeth Macarthur while John was in exile in England) was revolutionary. Innovation continued with Elizabeth Macarthur Onslow and Astley John Onslow Thompson’s introduction of share farming to grow their dairy business tenfold over the course of a few years; and then with Edward Macarthur Onslow’s establishment of the first rotary dairy in Australia—the Rotolactor.

At various times the Macarthur agricultural enterprises included sheep and wool breeding, grapes and wine production; horticulture—including breeding camellias and an extensive orchard of 7200 trees; dairying including cream, butter and fresh milk; pigs, and horse breeding. There was the first dairy herd to be declared tuberculosis free in New South Wales, the first calf in Australia from an artificially inseminated cow was born on Camden Park. They were early adopters of artificial insemination in the dairy industry, irrigation, pasture improvement and fodder conservation.

## Why is this important?

Why is this important to students? Agriculture plays a vital role in all our lives and it is important that students understand food and fibre production so that they can play an informed part in sustainable and healthy agricultural industries.

The other side of this story is the role of science and technology in improving our lives. The story of production and development at Camden Park is a story of science inquiry and technological design; of seeing an opportunity or problem and using existing knowledge and tools to design a solution or improvement; so it goes to the heart of STEM education.

Why is this important to Australia? Agriculture in Australia is a \$46.7 billion dollar industry (Australian Bureau of Statistics [link](#)). Farmers care for 61% of Australia's land mass with 94% of farmers actively undertaking natural resource management (National Farmers Federation [link](#)). The Australian Bureau of Statistics states that Australian farms produce 93% of the total volume of food consumed in Australia and on top of that 60% of farm produce is exported to 40 million consumers outside Australia ([link](#)). So it is worth doing well!

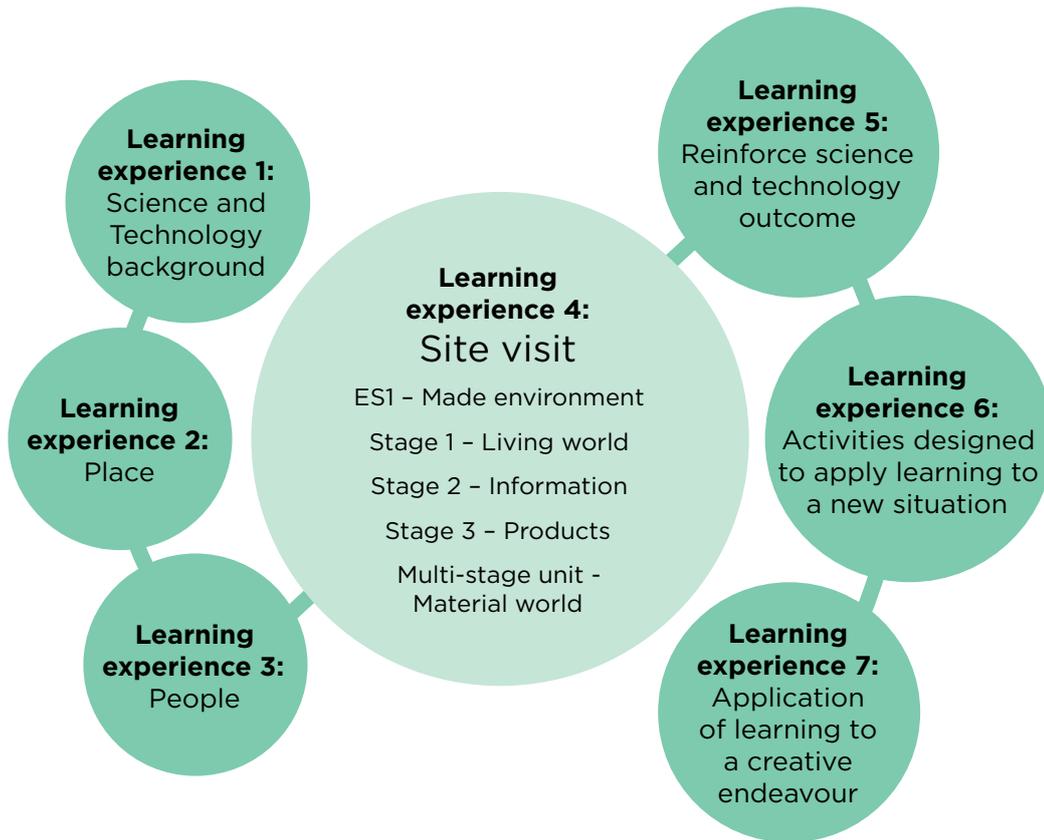
## The interactive timeline

We have produced an interactive timeline to visually represent the many enterprises, people and developments that are part of this story. There are categories for personal events in the Macarthur history (births and deaths) and categories that provide more detail on specific industries ie wool, wine, and dairy. The Australian history timeline is for context. (<http://www.belgennyfarm.com.au/schools/creamery>)

The timeline is designed to fit a number of purposes so it may appear at first as if there is too much information but you can limit the information shown. You can choose what you view by selecting the appropriate categories in the settings (indicated at bottom right by spanner in a white circle) and you can change the way you view the information.

If you are unable to access the timeline for any reason there is a pdf version available ([link](#)).

## Overview of the units



## Curriculum focus

We have chosen to focus on a different strand of science and technology for each stage to complement the interpretation and objects found in the Creamery.

- Early stage 1: Made Environment
- Stage 1: Living World
- Stage 2: Information
- Stage 3: Products
- Multi-Stage: Material world (addressing the objective Students develop knowledge and understanding of the Natural Environment and the Made Environment through the Material World)

A unit of work delving into an agricultural site must also consider the land and the people and so the units also support students working towards history and geography outcomes.

The skills working scientifically and working technologically are embedded in the activities that form the learning experience.

### Cross-curriculum priorities

Completion of these learning experiences will expose students to the following cross-curriculum priorities:

- Aboriginal and Torres Strait Islander histories and cultures
- Sustainability

## General capabilities

In addition to specific outcomes, students will work towards the following general capabilities:

- Critical and creative thinking
- Ethical understanding
- Information and communication technology capability
- Intercultural understanding
- Literacy
- Numeracy
- Personal and social capability

## How to use the units:

Each of the units involves a program of seven learning experiences planned around an inquiry method of learning. Detailed learning experiences and background notes are provided to support you in delivering the unit of work. However as students, classes, schools and teachers are all individual we encourage you to adjust the learning to suit your needs and the needs of your students. For example the learning intentions, order of the lessons or the number of lessons taken to achieve the learning intentions, can be adjusted and differentiated to your situation.

The first three learning experiences are intended to introduce students to the site and provide an opportunity for you to gauge students understanding of the outcomes. These lessons focus on the strand of science and technology that the unit focusses on, the geographical features that influence the site, and the people who have played a pivotal role in the site.

The fourth learning experience is the site visit (information provided in the unit documents will help you to draw student's attention to pertinent aspects of each room) and the following three learning experiences give students an opportunity to apply their new knowledge to their own lives and to reflect on their learning.



### Learning journals

A learning journal is a useful tool for students to reflect, plan, record or evaluate their learning.

We have included a pdf learning journal of graphic organisers that can be used to guide the completion of suggested activities as well as providing a booklet that students can keep as a record of their learning experience.

Alternatively, you may prefer to change the activities and use a blank exercise book for student's learning journals to allow more flexibility. Again we encourage you to adjust the activities to suit your situation.

The learning journal provides an area for reflection about the learning experience—to inform your practice next time you run the unit or to provide feedback to us (we would be pleased to receive any feedback at [schools.program@dpi.nsw.gov.au](mailto:schools.program@dpi.nsw.gov.au)).

## Assessment

A variety of assessment opportunities are embedded throughout the learning experiences, and we leave the details of this to your professional judgement.