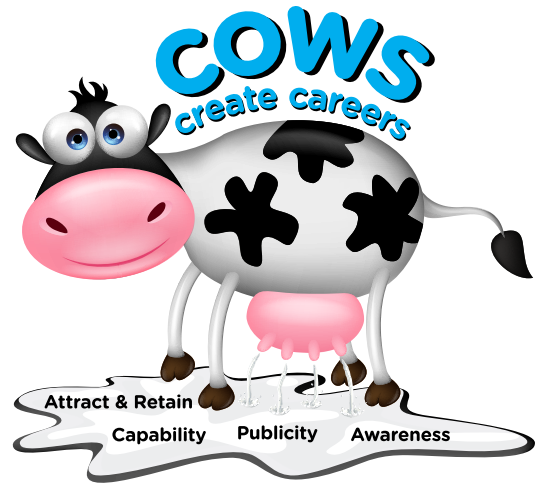




SPONSORS



2024 LIGHT CREAM CURRICULUM



THE COWS CREATE CAREERS PROJECT IS FUNDED BY:



Major Supply Partner:



THE HISTORY:

The Cows Create Careers project was initiated by the Lions Club of Strzelecki and McMillan College (Melbourne University) in 2004 into 9 Gippsland schools.

The committee consisted of a small group of volunteers who desired to share their passion and showcase the dairy industry and its opportunities to students in Gippsland. Many of those volunteers are still involved today.

The initial findings remain the legacy of the Cows Create Careers program 20 years later. The results are that many of our rural students are town kids who live in the country. They have not all had the opportunity to investigate the range of careers in Agriculture and specifically the dairy industry. Cows Create Careers can make this happen.

In 2023, the Cows Create Careers program was delivered Nationally to 23 dairying regions involving over 230 schools.

A special thanks to the volunteer dairy farmers and advocates who have been the reason for the program's success. Without you, Cows Create Careers would not have been able to profile the many students who have chosen to seek dairy industry employment opportunities. Let's keep this legacy rolling.

CONTACT DETAILS

Cows Create Careers Project Managers:

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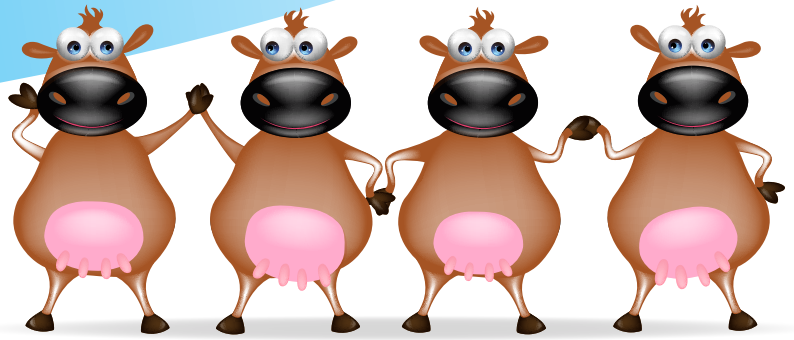


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OVERVIEW



Over the next few weeks, your school will be significantly involved in the lives of two calves. Caring for and monitoring the calves will be central to learning about the dairy industry and what it entails.

Competition

Work as part of a team and submit your work to have a chance to win prizes and awards.

Caring for calves

Work as part of a team to care for the calves, monitor their health, growth and report on their condition.

Presentation & awards day

Attend an interactive presentation and awards day where you will have the opportunity to share your learning.

Team discussion

Share your new awareness about rural industries and caring for animals with your team. Discuss your thought processes and understanding with your team.

Industry advocates and dairy farmers

When these guests engage with you and your school prepare questions and consider the knowledge that they can share with your class.



Research

Work as part of a team to use the internet to research a topic and career pathway. Present the research and information as part of your assessment tasks.

Online calves

Work in teams or individually to view our virtual calves called Bright and Future. Capture their growth rates on a graph and report.

Student worksheets

Take part in a 6-week online learning experience. Capture your knowledge on the student worksheets.

ASSESSMENT SUMMARY

WHAT TO SUBMIT

Teachers should select their best team's work to submit for assessment. If a school has both juniors and seniors participating in the project, they can submit the best team's work for each section. If there are multiple classes, please select the best team's work from each class. All student surveys will be conducted using a Survey Monkey link.

Here's how it works

Immerse yourself in Cows Create Careers by submitting the following tasks. This participation will allow you and your school to be eligible for regional and national prizes.

Students

Work in groups of 2 students and think of a catchy name for your team.

Note: Teachers may wish to implement this learning individually if students are working from home.

The following tasks will be completed for your school-based assessment:

1. Activity one to six student worksheets

Activity 1 - An Introduction to The Australian Dairy Industry & BioSecurities | Why it Matters (pages 12-13)

Activity 2 - Technology On Farm | Computer and Robotic Technology (pages 17-18)

Activity 3 - Natural Resource and Environment | Sustainable Farming (pages 22-23)

Activity 4 - Farm Safety | Keeping our Communities Safe (pages 27-29)

Activity 5 - Marketing | Dairy Careers (page 33)

Activity 6 - Dairy Nutrition | For the Dairy Cow and for Humans (pages 35-42)

2. Take a **Creative photo** (page 44)

3. **Student evaluation** – entry and exit (page 43)

4. **Final team checklist** (page 44)

Teachers

Teachers who submit their teacher evaluation forms (entry and exit) will gain an additional 5 points towards the school prize.

The forms can be accessed here:

Entry <https://www.surveymonkey.com/r/2024cccteacherentry>

Exit <https://www.surveymonkey.com/r/2024cccteacherexit>

Bonus points

A bonus point will be awarded to any school that submits all their work before the due date for the State/region. This will be added to the school's score for the school prize.

Submit the assessment task using:

Dropbox – Email nicki@jaydee.net.au to request your Dropbox link, then simply upload your files.

Google drive links – Are you using Google as your mail server? Simply attach all your large files to an email and Google will send via Google drive links.

Mail – Express post your work on a memory stick to: Cows Create Careers, PO Box 18, LOCH VIC 3945

Refer to the *School Resource Kit* for due dates and timelines for the project.

VIDEO REFERENCES

Participant activity one

1. [Farmer Bill - Bright & Future Video One](#)
2. [MaxCare Video](#)
3. [Dr Stephanie Bullen Video](#)
4. [NLIS Video](#)

Don't forget to complete your survey
@ <https://www.surveymonkey.com/r/2024cccstudententry>

Participant activity two

1. [Daviesway Milker Video](#)
2. [Farmer Bill - Bright & Future Video Two](#)

Participant activity three

1. [Farmer Bill - Bright & Future Video Three](#)
2. [Jamie Durie Groundswell Platform Video](#)

Participant activity four

1. [Farmer Bill - Bright & Future Video Four](#)
2. [Trish Hammond Video](#)
3. [Graeme & Jenny Cope Video](#)

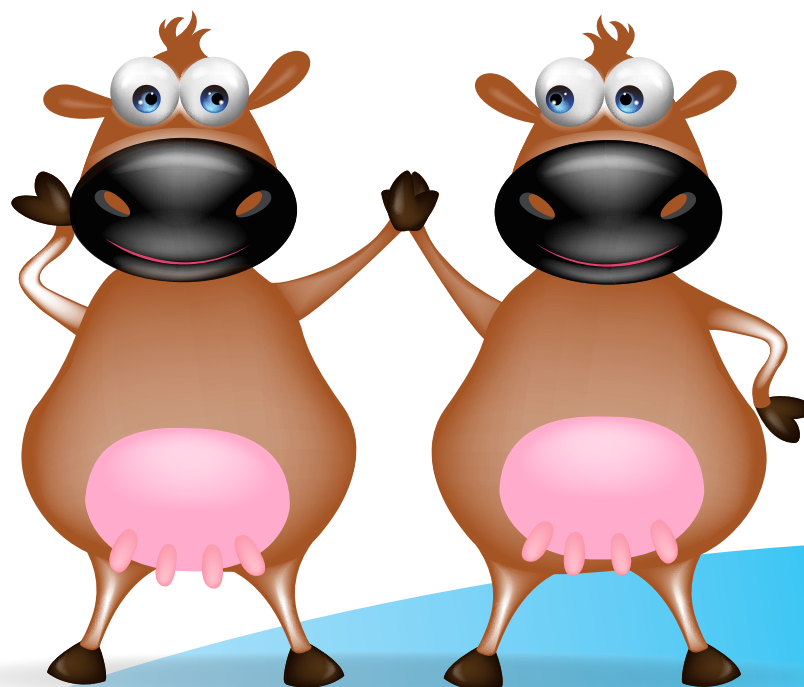
Participant activity five

1. [Farmer Bill - Bright & Future Video Five](#)

Participant activity six

No videos

Don't forget to complete your survey
@ <https://www.surveymonkey.com/r/2024cccstudentexit>



PRESENTATION AND AWARDS DAY

An interactive day will conclude the Cows Create Careers project for your school. An overall winning school prize for the junior and senior sections will be announced on this day. All students will receive a certificate of participation in the project.

REGIONAL SCHOOL AND TEAM PRIZE

\$250 school prize and \$20 iTunes vouchers for each team member (max \$100). These prizes apply to both the junior and senior sections.

NATIONAL PRIZE

\$2,000 school prize. This prize applies to both the junior and senior sections.

Regional school and team prize

To be eligible for this prize, the school must submit their best team's assessment work. This work must contain all the assessment tasks outlined in the Assessment Summary.

An independent assessor will assess the work based on an internal rubric. The highest school score for the region will take out the school and team prize. The prize is awarded in junior and senior sections only if two or more schools meet the assessment criteria in that section.

National prize

Each region's winning school team will then be eligible to submit a final entry for judging towards the National prize of \$2,000. This competition is open to both junior and senior sections. Schools can locate the criteria for this final entry in the *School Resource Kit*.

The regional prizes sections are listed below:

- Gippsland Victoria
- Northern Victoria & North East Victoria/New South Wales
- South West Victoria
- Launceston, Hobart and North West Tasmania
- Fleurieu Peninsula South Australia
- Mount Gambier & Limestone Coast South Australia
- Barossa & Mid North South Australia
- Murray Bridge & Adelaide Hills South Australia
- Busselton Western Australia
- Toowoomba Queensland
- Lismore New South Wales
- Mid Coast New South Wales
- Central New South Wales
- South & Far Coast New South Wales

If you get your work in before the due date your school can gain an additional point towards the final score.

Teachers who submit their teacher evaluation forms will gain an additional 5 points towards the final school score.

INDUSTRY ADVOCATE VISIT

Your school has its own industry advocate who will visit to give students a presentation about their role in the dairy industry. How about you prepare some questions that will assist with your research projects as a class?

Some key ideas/questions

Students may wish to investigate in more depth aspects of the industry advocate's work, such as:

- What pathway did you take to achieve your current position?
- What do you see as the real positives about working in the industry?
- What is the nature of study undertaken to qualify you to do this work?
- What 'duties' do you perform in this position?
- What do you think you will be doing in five years time? What about in ten years time?
- What special talents and interests are needed to succeed in your work?
- Tell us about the latest technology that is being used in relation to your career pathway?

Brainstorming careers

During the Cows Create Careers journey students will be collecting information and asking questions about work and work futures in the dairy industry.

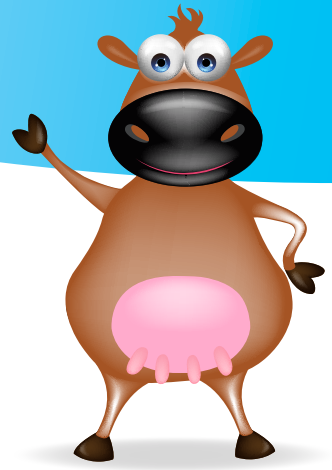
To help students make a start, here are a number of career areas listed below:

- feed systems
- artificial breeding
- shed design
- agronomy
- nutrition/stockfeed
- milking systems
- research and development
- farm management
- environmental management systems
- dairy farmer
- manufacturing
- finance
- technology and engineering
- robotics
- marketing
- dietician
- animal welfare
- herd improvement
- pasture improvement
- agricultural consultant

Note: Industry advocate visits can be in person or via zoom or other online alternatives.



ARRIVAL OF THE CALVES IN SCHOOL



The calves are going to be arriving at your school soon. Work together as a class to ensure that you are well prepared for the calves arrival at your school.

Key ideas

Research and identify environmental conditions

Identify conditions conducive to calf safety and growth and ensure that your facilities meet these requirements before the calves arrival.

Prepare a calf rearing plan

Develop a plan to ensure the health and welfare of the calves whilst they are in your care.

Develop a roster to feed the calves

What is the most effective way for teams to share the care and monitoring of the calves during their stay at school? How can we ensure each team shares responsibilities (including weekends)?

Create a checklist of questions to ask the dairy farmer

The first question will be to ask the dairy farmer about the feeding regime for the calves. Write these details on the poster included in your *School Resource Kit*. Display the calf health poster in a central position so everyone can see it.

Research and understand the importance of looking after your own personal hygiene

Personal hygiene is critical when looking after animals. Make sure that your team and class understands why. Display the hygiene poster as a reminder to students.

Prepare daily and weekly checklists for monitoring the calves

Have a look over the samples that have been included in the *School Resource Kit*.

Use the MaxCare app on page 45 for some great tips about feeding and rearing calves.



Does the class understand the general principles of calf management?

Do you know what needs to be done, when and why? Perhaps refer to the Dairy Australia Calf rearing handbook for helpful tips. A copy of this handbook can be found on your CCC memory stick as a PDF. Alternatively, your teacher may have a copy in the library.

Monitor the calves' weight gain

Make sure you monitor and record the calves' feeding regime and weight gain whilst they are in your care. Include this in your scientific report or letter/email to Jaydee Events Pty Ltd.

Veterinary assistance

Please get in touch with the dairy farmer or project manager listed on your information sheet if your school has a concern about the health and welfare of the calves. If a vet is required, then approval of veterinary expenses must be authorised.

Animal biosecurity

Make sure that you are aware of the biosecurity requirements in your State. If you need some assistance, contact your project manager.

Note: our virtual calves Bright and Future can be used for this component of the project

If a vet is required, approval of vet expenses must be authorised by calling 0412 368 739 (John) or 0419 878 055 (Deanne).

TASKS FOR SUBMISSION

1. Student worksheets

Activity 1 - An Introduction to The Australian Dairy Industry & BioSecurities | Why it Matters (pages 12-13)

Activity 2 - Technology On Farm | Computer and Robotic Technology (pages 17-18)

Activity 3 - Natural Resource and Environment | Sustainable Farming (pages 22-23)

Activity 4 - Farm Safety | Keeping our Communities Safe (pages 27-29)

Activity 5 - Marketing | Dairy Careers (page 33)

Activity 6 - Dairy Nutrition | For the Dairy Cow and for Humans (pages 39-42)

2. Creative photo task

Submit a creative photo of your team with the calves. Don't forget to include the bag of milk powder that has been sponsored for your school.

Further details about this task can be found on page 43.

3. Student evaluation – entry and exit

Submit your student evaluation data using these links:

Entry surveymonkey.com/r/2024cccstudententry

Exit surveymonkey.com/r/2024cccstudentexit

Further details about the surveys can be found on page 43.

4. Final team checklist

Please ensure that your team completes this form to accompany your assessment work. Print your names clearly for certificates.

Further details about this task can be found on page 44.



ACTIVITY ONE - AN INTRODUCTION

THE AUSTRALIAN DAIRY INDUSTRY & BIOSECURITIES | WHY IT MATTERS

- 1. SURVEY** www.surveymonkey.com/r/2024cccstudententry
- 2. READ** Learning activity one - overview sheet
- 3. WATCH** Video(s) [Farmer Bill - Bright & Future Video 1](#),
[MaxCare Video](#), [Dr Stephanie Bullen Video](#) & [NLIS Video](#)
- 4. READ** Learning activity one - information sheet
- 5. COMPLETE** Learning activity one - student worksheet
- 6. SUBMIT** Learning activity one - student worksheet to your teacher



ACTIVITY ONE - AN OVERVIEW

THE AUSTRALIAN DAIRY INDUSTRY & BIOSECURITIES | WHY IT MATTERS

Purpose:

1. Introduce **Bright & Future** the calves to students and talk about their age, environment and what they need to stay happy and healthy and continue to grow. VISUAL LEARNING/VIDEO
2. Introduce Bill Loughridge to the students, providing background and information about his farm. VISUAL LEARNING/ VIDEO
3. Introduce MaxCare and their video on how to mix the milk powder to feed the calves. VISUAL LEARNING/ VIDEO
4. Introduce Dr Stephanie Bullen from Dairy Australia and her video about footpaths. VISUAL LEARNING/ VIDEO
5. Introduce NLIS with an explanation of the benefits of this scheme to Australian Agriculture. VISUAL LEARNING/VIDEO
6. Engage the students to learn about the Australian dairy industry. READING/COMPREHENSION
7. Test the knowledge of the students with an engaging learning activity/competition. REVISION.

Week one:

- This is your first weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, revision and some physical activity.

Activities:

The students will:

- Complete a student quiz to test their learning
- Write down 100 words on what you have learnt about the Australian Dairy Industry & BioSecurities [Primary Students: 50 words or 8 dot points]
- Get ready to plot/graph the weight and weight gain of **Bright & Future**

What is provided?

- Four short videos for students to watch and learn
- A document for students to read information about the Australian Dairy Industry
- A student worksheet as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers

Competition

- Each teacher will forward their best two submissions from Week One by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

The Cows Create Careers team are here every day and ready to respond to any questions immediately by either emailing admin@jaydee.net.au or phoning John 0412 368 739 or Deanne 0419 878 055.

CURRICULUM AREAS

English/Literacy:

Years 5 to 10: ACELY1707, 1704, 1717, 1714, 1728, 1725, 1738, 1736, 1748, 1746, 1776, 1756

Year 11: English Unit 1: Create a range of texts, Reflect on their own and others' text

Mathematics:

Years 5 to 10: ACMSP119, 120, 147, 148, 169, 170, 284, 228, 253

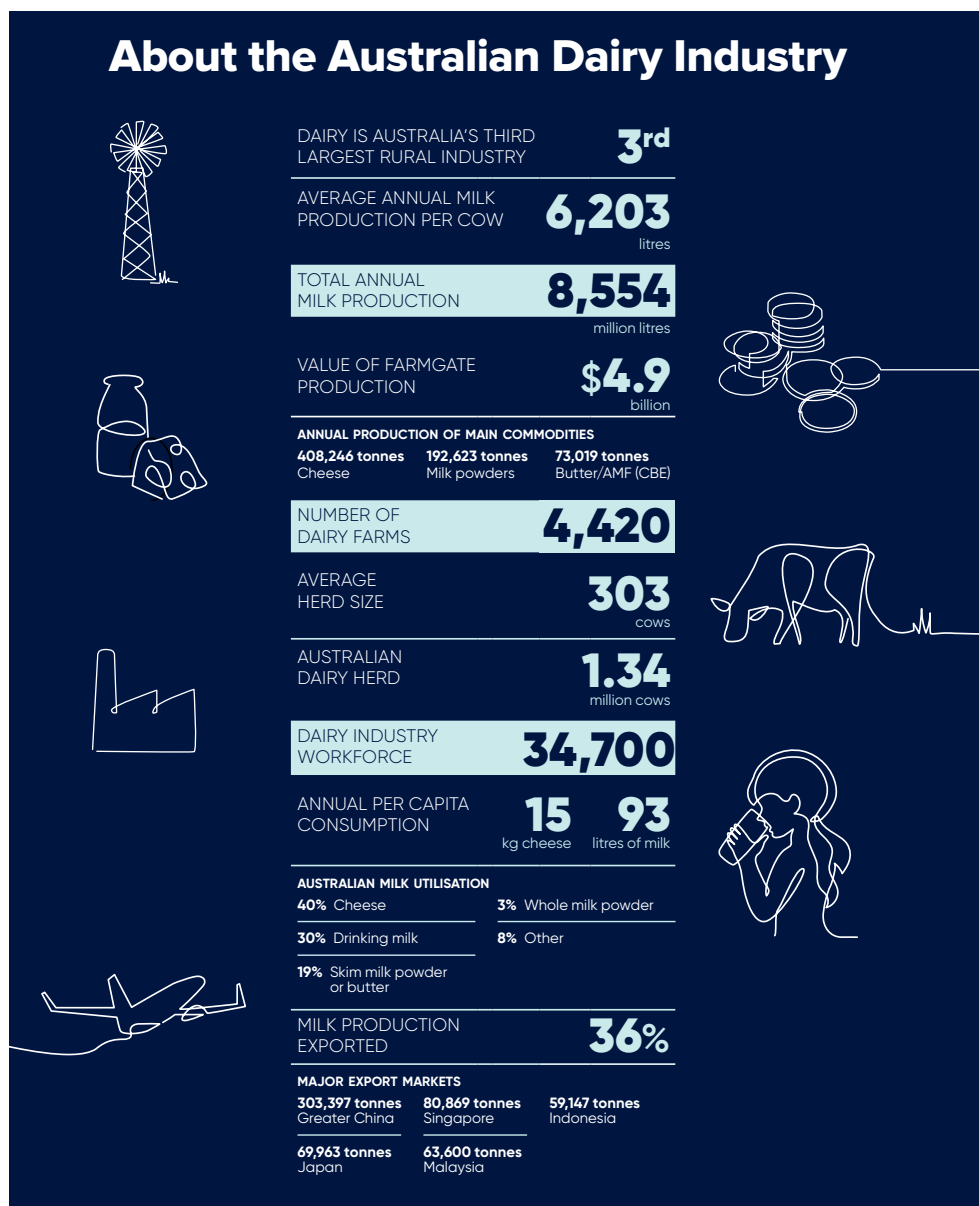
Year 11: General Mathematics Unit 2: The statistical investigation process

Health & Physical Education:

Years 5 to 10: ACPPS054, 073, 095, 096

ACTIVITY ONE - INFORMATION

THE AUSTRALIAN DAIRY INDUSTRY & BIOSECURITIES | WHY IT MATTERS



Reference: Dairy Australia

ACTIVITY ONE - STUDENT WORKSHEET

THE AUSTRALIAN DAIRY INDUSTRY & BIOSECURITIES | WHY IT MATTERS

School Name _____

Student Name _____

Year Level _____

Quiz questions

Listen to [Farmer Bill's - Bright & Future Video 1](#)

1. How long has Farmer Bill been farming for?

2. How many employees does Farmer Bill have on his farm?

3. How many cows does Farmer Bill milk?

4. What are the names of the two Cows Create Careers calves?

5. How much colostrum milk do calves receive in the first 12 hours after being born?

6. How long are the calves kept in the shed / pen environment?

7. What are the two main food types that the calves receive in the pen?

8. What is the calves bedding made from?

9. At the age of 15 months the calves are joined, what age do they come into the herd as milkers?

Listen to the [MaxCare Video](#)

1. What tools would a person need to mix MaxCare milk powder?

2. Which of the range of MaxCare milk powders are they mixing in the video?

3. How many kilograms of MaxCare milk powder would a person need to make 8 litres of milk for the calves?

4. The calves at 3 weeks old will need 3-3.5 litres of MaxCare milk powder twice a day. If you are feeding 8 calves for 30 days how many litres of MaxCare milk powder will the calves consume?

5. Identify the type of information that MaxCare has on the back of their milk powder bag?

6. If a supplier orders 5 bags of MaxCare milk powder, each bag is 20kg. How many litres of milk can the farmer make?

ACTIVITY TWO - AN INTRODUCTION

TECHNOLOGY ON FARM | COMPUTER AND ROBOTIC TECHNOLOGY

1. RENAME THE CALVES COMPETITION

www.surveymonkey.com/r/2024brightfuture

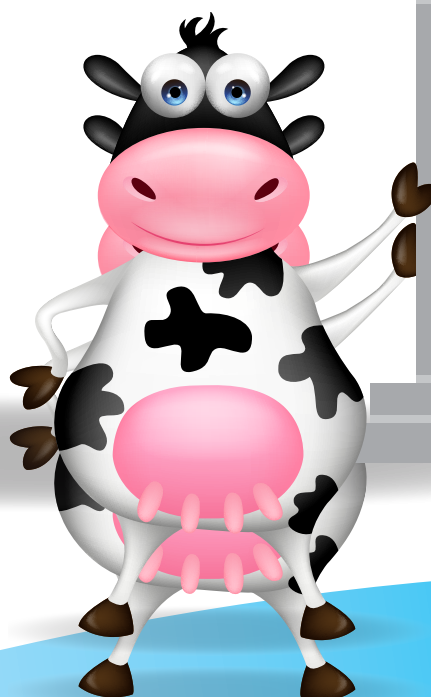
2. READ Learning activity two - overview sheet

3. WATCH Video(s) [Farmer Bill - Bright & Future Video 2](#) & [Daviesway Video](#)

4. READ Learning activity two - information sheet

5. COMPLETE Learning activity two - student worksheet

6. SUBMIT Learning activity two - student worksheet to your teacher



ACTIVITY TWO - AN OVERVIEW

TECHNOLOGY ON FARM | COMPUTER AND ROBOTIC TECHNOLOGY

Purpose:

1. Update about **Bright & Future** how they have progressed, how much they have grown and whether their diet has changed since the last update. VISUAL LEARNING/VIDEO
2. Introduce the technology on Bill Loughridge's farm to the students, provide information about the rotary dairy and the technology that is used inside his shed. VISUAL LEARNING/ VIDEO
3. Introduce Daviesway and their video on robotic milking technology. VISUAL LEARNING/VIDEO
4. Engage the students to learn about the types of milking sheds in Australia. READING/ COMPREHENSION
5. Test the knowledge of the students with an engaging learning activity/competition. REVISION

Week two:

- This is your second weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, revision and some physical activity.

Activities:

The students will:

- Complete a student quiz to test their learning
- Write 100 words on what the different types of milking sheds are in Australia and which one they would choose and why they would make this choice?

- Design a new invention or a new technology or modify an existing technology (machinery), e.g. automatic gate timer, weigh scales or virtual fencing
- Don't forget to plot the weight gain of **Bright & Future**.

What is provided?

- Two short videos for students to watch and learn
- A document for students to read information about the types of milking sheds in Australia
- A student worksheet as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers.

Competition

- Each teacher will forward their best two submissions from Week Two by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

The Cows Create Careers team are here every day and ready to respond to any questions immediately by either emailing admin@jaydee.net.au or phoning John 0412 368 739 or Deanne 0419 878 055.

CURRICULUM AREAS

English/Literacy:

Years 5 to 10: ACELY1707, 1704, 1717, 1714, 1728, 1725, 1738, 1736, 1748, 1746, 1776, 1756

Year 11: English Unit 1: Create a range of texts, Reflect on their own and others' text

Technologies

Years 5 to 10: ACTDEP035/048

Media Arts

Years 5 to 10: ACAVAM116, 120, 128
ACAMAM068, 69

Science

Year 11: Earth & Environmental Science Unit 1 & 2 – ACSES010

ACTIVITY TWO - INFORMATION

TECHNOLOGY ON FARM | COMPUTER AND ROBOTIC TECHNOLOGY

Each dairy farm has a milking shed where the cows are milked by machines. The milk is held in a vat before it is collected Each day and taken to the factory by a milk tanker.

Herringbone

One of the most common milk sheds, the herringbone shed, has a central sunken pit and a raised platform on each side where the cows stand whilst being milked. The cows are angled anywhere from 45 to 90 degrees to the pit, where the milking staff work. The milking machines are located within or above the pit and the operators apply one set of 4 cups to the cow's udder from either behind or in front of her hind legs. After milking, the front gate is opened and the cows walk out. Herringbone sheds can vary from six cows per side to up to thirty cows per side.



Robotic dairy

There are a small number of robotic dairies (also called Automatic Milking Systems) in Australia, where a robot milks the cows without human involvement. The cows walk to the dairy at their own desire and enter the milking booth where they are rewarded with feed. The robot washes the udder and sensor-guided cups are applied to milk the cow. The robot sprays disinfectant onto the teats after milking and the gate opens to allow the cow to leave.

Rotary

A rotary shed is a large circular platform that rotates like a carousel whilst the cows are being milked. The cows walk on to the raised platform at the entrance point and an operator applies the milking machines. Each cow is in an individual stall and the platform slowly rotates so milking is completed by the time the cow has completed the circle. Another operator at the exit point removes the cups and the cows leave the platform.



ACTIVITY TWO - STUDENT WORKSHEET & WORDFIND

TECHNOLOGY ON FARM | COMPUTER AND ROBOTIC TECHNOLOGY

School Name _____

Student Name _____

Year Level _____

Questions

Listen to the [Daviesway Video](#)

Find the answers ([Daviesway](#))

1. What is the difference between the MR-S2 and MR-D2 robots?

2. The new 3D camera has four amazing attributes, what are they?

3. What are three benefits of the pre-dip mechanism of the robot?

4. BouMatic also showcase the SR2 spray robot. List at least three of the benefits.

5. What is the BouMatic Self-guided feed pusher called? Name two benefits.

6. What is the BouMatic Robotics motto?

Word find Questions

Listen to [Farmer Bill's - Bright & Future Video 2](#)

Find the answers ([Farmer Bill](#))

1. What is the identification tag called that Farmer Bill uses?

2. On the platform what three things can the computer read?

3. Once the computer identifies the cows what can it then adjust?

4. What is herd test used for on Bill's farm?

5. What type of shed does Farmer Bill own?

Note: Please find these answers in the word find on the following page.

Y T A K L K D L Y U S C Y U K E J A J J
V F E E D I N G R E Q U I R E M E N T S
R N W I A T J W P G G C B I Z X B Q P L
Y J K G A Z S D F E E D R A T I O N B Z
L D A P A M X L L N G D S O R X K M H N
T W Y X D F I D M Z Y E A Y Z D A Y R P
E W Y J M B R L Q K D O R G X S U R T N
I E D P E I G R K K E N M W T S N N P N
Z A J N E R P Q E P L A R X W O K M T B
R K P N A Z Q M Z M R N T Q T E I O Y C
K I L P M O P C D L Q O J S Q H A W H B
E Y O T J H W E J Z A N D V R G P B Y F
T U W G W P B P H S W L U U L V Q C Q M
R W M C S V A C M M X I V F C Y Y Z A K
O D P C C J A R N Z S S K Z V T C K R R
T O J Z E M P D E H E G I Z M C I C W J
A J K Z A Z F K L N V P N M M S R O V X
R W L K T I Y Y R K T P W P P J Z P N C
Y F B U H B Y Z O K Z S I T N Q P U M M
W V H U Z O S F E H U K H T E D T G O Y

NL__

MI__ PR_____

FEED__

REQ_____

PA_____

FE__RA_____

RO_____

Read about the different types of milking sheds in Australia.

Write 100 words about which one you would choose and why you would make this choice?

You may wish to research the internet to reinforce the reason for your decision ie. price, efficiency, labour, lifestyle.

Primary Students: [50 words or 8 dot points]

Attach a picture of your new invention or technology then email it to your teacher. Involve your friends to discuss your designs.

Now it is time to critique, analyse and investigate your design:

1. Tell us the benefit of your design and why it has great functionality and purpose?

2. Suggest some modifications to the design that may improve its functionality and purpose.

Note: For junior students, you may wish to start with a picture of current technology or machinery as a starting point; for senior students, you may wish to create a completely new innovation.

Following are the latest weights of Bright and Future our Holstein calves, please add these to your plot/graph

Week 2 Bright 54.5kg
Future 55kg

ACTIVITY THREE - AN INTRODUCTION

NATURAL RESOURCE AND ENVIRONMENT | SUSTAINABLE FARMING

- 1. READ** Learning activity three - overview sheet
- 2. WATCH** Video(s) - [Farmer Bill's Video 3](#) & [Jamie Durie Groundswell Platform Video](#)
- 3. READ** Learning activity three - information sheet
- 4. COMPLETE** Learning activity three - student worksheet
- 5. SUBMIT** Learning activity three - student worksheet to your teacher



ACTIVITY THREE - OVERVIEW

NATURAL RESOURCE AND ENVIRONMENT | SUSTAINABLE FARMING

Purpose:

1. Update about **Bright & Future** how they have progressed, how much they have grown and whether their diet has changed since the last update. VISUAL LEARNING/VIDEO
2. Introduce the Environmental practices on Bill Loughridge's farm to the students, provide information about how these are implemented on his farm. VISUAL LEARNING/ VIDEO
3. Introduce Jamie Durie's Groundswell platform which talks about the Australian dairy industry's sustainability story. VISUAL LEARNING/VIDEO
4. Engage the students to learn about the Dairy Industry's mission to meet the challenge of climate change and good stewardship of our natural resources. READING/COMPREHENSION
5. Test the knowledge of the students with an engaging learning activity/competition. REVISION

Week three:

- This is your third weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, revision and some physical activity.

Activities:

The students will:

- Complete a student quiz to test their learning
- Write 100 words on what the dairy industry is doing to improve land management, increase water use efficiency, reduce greenhouse gas emission intensity and reduce waste
- Get some exercise and provide a 60 second video on how they are managing the waste in their household
- Tell us how they currently manage their waste at home or school and how they can improve
- Write down 8 dot points about what the dairy industry is doing to improve land management, increase water use efficiency, reduce greenhouse gas emissions and reduce waste

- Share their learning with the family - perhaps they may get involved in the video as well
- Don't forget to plot the weight gain of **Bright & Future**.

What is provided?

- Two short videos for students to watch and learn
- A short document for students to read about Natural Resources and Environmental management in relation to dairy farming
- A student worksheet as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers.

Competition

- Each teacher will forward their best two submissions from Week Three by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

The Cows Create Careers team are here every day and ready to respond to any questions immediately by either emailing admin@jaydee.net.au or phoning John 0412 368 739 or Deanne 0419 878 055.

CURRICULUM AREAS

English/Literacy:

Years 5 to 10: ACELY1707, 1704, 1717, 1714, 1728, 1725, 1738, 1736, 1748, 1746, 1776, 1756

Year 11: English Unit 1: Create a range of texts, Reflect on their own and others' text

Humanities

Years 5-6: Inquiry and skills

Years 7 to 10: ACHGK037, 038, 052, 063, 070, 071

Media Arts

Years 5 to 10: ACAVAM116, 120, 128
ACAMAM068,69

Science

Year 11: Earth & Environmental Science Unit 1 & 2 – ACSES010

ACTIVITY THREE - INFORMATION

NATURAL RESOURCE AND ENVIRONMENT | SUSTAINABLE FARMING

Our mission is to meet the challenge of climate change and provide good stewardship of our natural resources.

Good environmental management is just 'good management'

Dairy farmers are environmental caretakers. They're committed to managing land and water responsibly, reducing greenhouse gases and protecting Australia's natural resources for future generations.

Check out this video <https://vimeo.com/manage/videos/916367827> produced for Jamie Durie's Groundswell platform which talks about the Australian dairy industry's sustainability story to inspire people to make sustainable choices in their lives. Most dairy farmers understand that what is good for the earth is also good for them, their animals and their business.

Climate change challenge

With climate change comes increasing heatwaves, storms and drought which will affect animal welfare and milk production, as well as limit pasture growth. On top of that, competition for natural resources is growing worldwide, while a drying climate is likely to place increasing pressure on already stressed water resources.

With this, comes the combined challenge of providing sufficient milk to meet global market demands, the opportunity to adapt our practices to climate change, as well as further reduce waste and improve productivity.

As a result, many environmental initiatives are happening on dairy farms and in dairy processing facilities right now.

A significant, long-term response to the impacts of climate change is required. As part of this response we'll mitigate our own greenhouse gas emissions and reduce water intensity in manufacturing and on farms.

To ensure we tackle the challenges head-on, we have identified four key goals to achieve by 2030:

Improve land management

<https://www.dairy.com.au/sustainability/reducing-environmental-impact/land-management>

Increase water efficiency

<https://www.dairy.com.au/sustainability/reducing-environmental-impact/water-efficiency>

Reduce greenhouse gas emissions

<https://www.dairy.com.au/sustainability/reducing-environmental-impact/reducing-emissions>

Reduce waste

<https://www.dairy.com.au/sustainability/reducing-environmental-impact/reducing-emissions>

To meet these goals, here are some examples of what we're implementing:

Irrigation — On-farm we're working with farmers on smarter irrigation practices and developing a simple online water budget and water risk management tool.

Emissions — Developed as part of the Profitable Dairying in a Carbon-Constrained Future program, the Dairy Climate Toolkit enables quick evaluation of the impacts of different greenhouse gas reduction strategies.

Food recovery — Tackling the emerging issue of food waste, the dairy industry is now a major player in food recovery and donation to charities like Foodbank. Ways to reduce food waste are also being investigated.

Innovation — The Dairy Manufacturers Sustainability Council's (DMSC) regular expert forums are invaluable to share the latest technologies and products to reduce energy, water use and waste.

For more information on how the industry is working towards more sustainable practices, view the latest [Australian Dairy Industry Sustainability Framework](#).

ACTIVITY THREE - STUDENT WORKSHEET & CROSSWORD

NATURAL RESOURCE AND ENVIRONMENT | SUSTAINABLE FARMING

School Name _____

Student Name _____

Year Level _____

Crossword clues

Listen to [Farmer Bill's - Bright & Future Video 3](#) and the [Jamie Durie Groundswell Platform Video](#)

Clues from [Bill's video](#)

- In 1991-92 Farmer Bill helped start up the Mount Lyall _____ group and has been an active conservationist member since [2 Down]
- Farmer Bill _____ the waterways and remnant vegetation to improve water quality [8 Across]
- Melbourne Water are now taking on the responsibility for improving the bigger water front edges as it helps improve _____ from entering the main river ways [3 Down]
- The addition of _____ along the waterways has made the farm look a whole lot more aesthetically beautiful [1 Down]
- Farmer Bill is utilising the _____ from the dairy to grow crops and improve the soil to grow grass in the summertime. [6 Down]

Clues from [Jamie's video](#)

- Sandra Jefford is a dairyfarmer who has the aim to become carbon neutral by largely storing more carbon in the _____ [4 Down]
- Wilco and Sandra plan to use _____, wind and batteries to reduce their carbon footprint [7 Across]
- Brad Ridoutt, CSIRO stated that if Australians shifted to eat more like the way we are recommended to by the dietary guidelines then overall our _____ gas emissions would go down by 12 percent [5 Across]

- Ad van Dijk from Lion Dairy & Drinks stated that the company's aim is to have a zero footprint and landfill target, they are producing a _____ made bottle to reduce their footprint [9 Down]

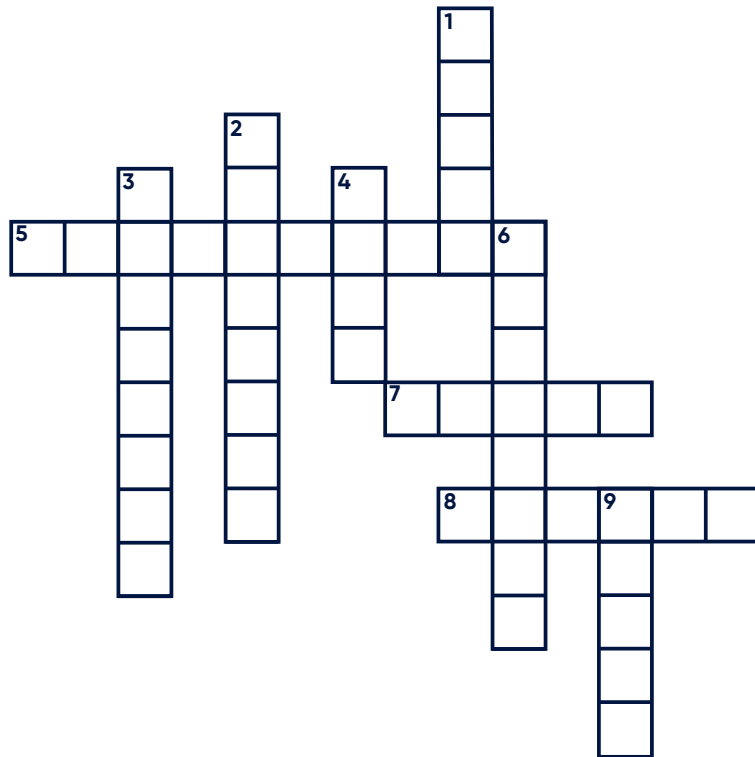
Note: Complete the crossword over the page using your answers

Write 100 words on what the dairy industry is doing to improve land management, increase water use efficiency, reduce greenhouse gas emissions, intensity and reduce waste. Use the links in your information sheet.

You may wish to research the internet to learn some more about what dairy is doing to achieve this. Primary Students: [50 words or 8 dot points]



Crossword



You will have submitted a 60 second video on how to manage waste in your household.

Can you please tell us how you currently manage waste and identify two ways that you could improve managing your waste and/or environmental footprint.

How do you do it now?

How can you do it better?

Write down 8 dot points about what the dairy industry is doing to improve land management, increase water use efficiency, reduce greenhouse gas emissions, and reduce waste.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Following are the latest weights of Bright and Future our Holstein calves, please add these to your plot/graph

Week 3 Bright 62.7kg
Future 63.1kg

ACTIVITY FOUR - AN INTRODUCTION

FARM SAFETY | KEEPING OUR COMMUNITIES SAFE

1. FINAL VOTING FOR CALVES COMPETITION

www.surveymonkey.com/r/2024finalbrightfuture

2. **READ** Learning activity four - overview sheet

3. **WATCH** Video(s) - [Farmer Bill's - Bright & Future Video 4](#), [Trish Hammond Video](#) & [Cope Video](#)

4. **READ** Learning activity four - information sheet and learn & teach document

5. **COMPLETE** Learning activity four - student worksheet

6. **SUBMIT** Learning activity four - student worksheet to your teacher



ACTIVITY FOUR - OVERVIEW

FARM SAFETY | KEEPING OUR COMMUNITIES SAFE

Purpose:

1. Update about **Bright & Future** and how they have progressed, how much they have grown and whether their diet has changed since the last update. VISUAL LEARNING/VIDEO
2. Introduce Gippsland dairy farmer, Trish Hammond to talk about the safety system she has developed on her farm. VISUAL LEARNING/VIDEO
3. Introduce Gippsland Focus farmers, Graeme & Jenny Cope to talk about quad bike safety on their farm. VISUAL LEARNING/VIDEO
4. Engage the students to learn about the importance of safety on farms and in their communities. READING/COMPREHENSION
5. Test the knowledge of the students with an engaging learning activity/competition. REVISION

Week four:

- This is your fourth weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, revision and some physical activity.

Activities:

The students will:

- Complete a 'spot the safety problem' exercise to test their learning about farm safety
- Come up with an A-Z list or guide about Farm Safety
- Identify the most hazardous room in their home or school and take a picture of two different examples of how they could minimise or prevent injury

- Students will be required to take before and after pictures
- Involve their family to help get some ideas flowing
- Don't forget to plot the weight gain of **Bright & Future**.

What is provided?

- Three short videos for students to watch and learn
- A document for students to read information about Keeping Communities Farm Safe
- A student worksheet as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers.

Competition

- Each teacher will forward their best two submissions from Week Four by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

The Cows Create Careers team are here every day and ready to respond to any questions immediately by either emailing admin@jaydee.net.au or phoning John 0412 368 739 or Deanne 0419 878 055.

CURRICULUM AREAS

English/Literacy:

Years 5 to 10: ACELY1707, 1704, 1717, 1714, 1728, 1725, 1738, 1736, 1748, 1746, 1776, 1756

Year 11: English Unit 1: Create a range of texts, Reflect on their own and others' text

Health & Physical Education

Years 5 to 10: ACPPS054, 073, 095, 096

Media Arts

Years 5 to 10: ACAVAM116, 120, 128
ACAMAM068, 69

ACTIVITY FOUR - INFORMATION

FARM SAFETY | KEEPING OUR COMMUNITIES SAFE

People on farm

Remember farms can be dangerous places and there are rules and practices to consider to ensure everyone working, living on or visiting a farm is kept safe.



Farm owners and operators should:

- Allocate areas for all visitors to feel safe
- Make sure visitors are not permitted in the work areas unless supervised
- Provide visitors with a High-Vis Vest if supervising them to visit a work area
- Where possible provide a separate roadway for heavy vehicles/machinery away from the house
- Erect signage to alert visitors about all roadways used by heavy vehicles/machinery
- Speed restriction zones near a house
- Fence off any water sources such as tanks, pools, dams, especially if near the house.

Animals

Interacting with animals on a farm can be dangerous and you should always treat animals with caution

Cows:

- A full-grown Holstein cow weighs an average of about 700kg
- Many people handling cows can be injured by being kicked, stood on or crushed
- Cows can be unpredictable at times. Even docile animals can change temperament if stressed or isolated
- Cows with young calves can become agitated
- Horned cows increase the risk of injury



- Working with cows on your own should be avoided, particularly when working in yards, loading cows, undertaking tasks with newborn calves and working with bulls.

Mobile machinery

Mobile machinery is used on and around a farm. When this machinery is not used properly it can be very dangerous

Adult quad bikes:

- Not to be ridden by anybody under 16 years old
- No passengers allowed
- Helmets must be worn
- Should have a crush protection device
- Keys should be removed when not in use.



Tractors:

- Should only be driven by licensed drivers
- Visitors should not be in the work area where a tractor is being used unless supervised and wearing a High-Vis Vest
- Tractors should all be fitted with Roll-over Protection
- Instruct children not to approach operating machinery
- Keys should be removed when not in use.



Farm utes

- Should only be driven by licensed drivers
- People should only ride in the vehicle cabin if there is a seat belt fitted
- Keys should be removed when not in use.



Reference: Dairy Australia

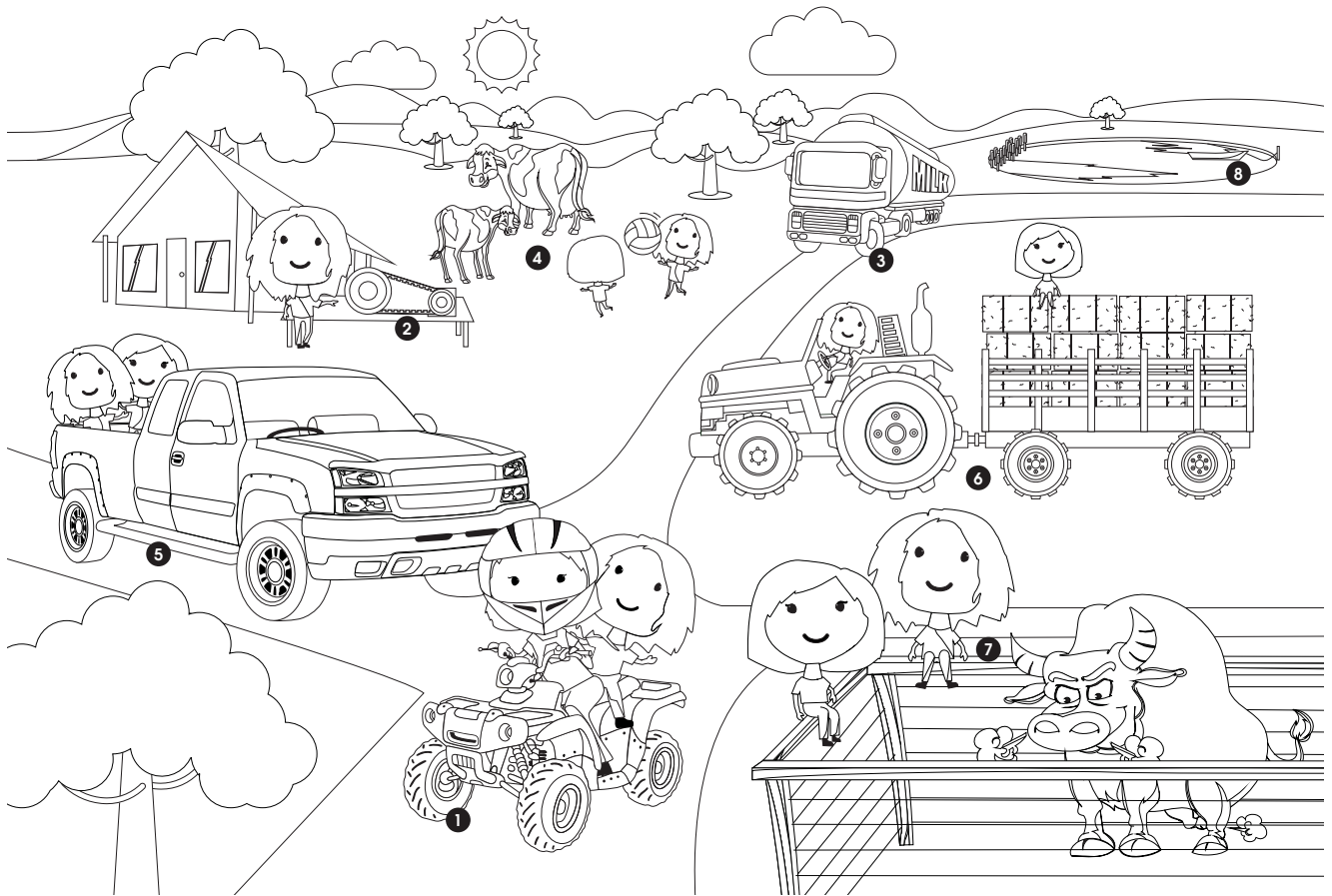
ACTIVITY FOUR - STUDENT WORKSHEET

FARM SAFETY | KEEPING OUR COMMUNITIES SAFE

School Name _____ Student Name _____

Year Level _____

Spot the safety problem



1.
2.
3.
4.

5.
6.
7.
8.

A - Z Farm Safety Checklist

Use each letter of the alphabet below to identify a potential hazard / risk that may be found on a dairy farm and then provide an explanation as to how to minimise this risk. Use your own words. [Teachers: students can either complete below or develop an entire guide/booklet, the choice is yours]

A is for		Minimise the risk by:	
B is for		Minimise the risk by :	
C is for		Minimise the risk by:	
D is for		Minimise the risk by:	
E is for		Minimise the risk by:	
F is for		Minimise the risk by:	
G is for		Minimise the risk by:	
H is for		Minimise the risk by:	
I is for		Minimise the risk by:	
J is for		Minimise the risk by:	
K is for		Minimise the risk by:	
L is for		Minimise the risk by:	
M is for		Minimise the risk by:	
N is for		Minimise the risk by:	
O is for		Minimise the risk by:	
P is for		Minimise the risk by:	
Q is for		Minimise the risk by:	
R is for		Minimise the risk by:	
S is for		Minimise the risk by:	
T is for		Minimise the risk by:	
U is for		Minimise the risk by:	
V is for		Minimise the risk by:	
W is for		Minimise the risk by:	
X is for		Minimise the risk by:	
Y is for		Minimise the risk by:	
Z is for		Minimise the risk by:	

Home & School safety

Please identify the most hazardous rooms in your home or school below and then list two different examples of how you could minimise or prevent injury.

Describe the hazard

List two different examples of how to minimise the hazard

1.

2.

Attach a picture of your hazard before and after then email these photos (JPG's) to your teacher. Involve your family with your thinking.

Following are the latest weights of Bright and Future our Holstein calves, please add these to your plot/graph

Week 4 Bright 65kg
Future 65.5kg

ACTIVITY FIVE - AN INTRODUCTION

MARKETING | DAIRY CAREERS

- 1. SURVEY** www.surveymonkey.com/r/2024cccstudentexit
- 2. READ** Learning activity five - overview sheet
- 3. WATCH** Video - [to Farewell Bright & Future Video 5](#)
- 4. READ** Learning activity five - information sheet
- 5. COMPLETE** Learning activity five - student worksheet
- 6. SUBMIT** Learning activity five - student worksheet to your teacher



ACTIVITY FIVE - OVERVIEW

MARKETING | DAIRY CAREERS

Purpose:

1. Experience a real life example of the importance of marketing products/services in the dairy industry
2. Explore some career pathways in the dairy industry by investigative learning.

Week five:

- This is your fifth weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, research and revision.

Activities:

The students will:

- Select one company from the information sheet to design a new sales pitch and a new logo that best explains what the company does, ie. Cows Create Careers – ‘teaching students about agriculture’
- Research and identify three careers in the dairy industry. Use the information sheet with the company logos to assist. Each of these logos are connected to that company’s websites to conduct your research
- Write a paragraph about those three careers and tell us what those careers involve
- Don’t forget to plot the final weight gain of **Bright & Future**.

What is provided?

- One short video to watch and learn
- A document for students to read and research information about different companies who work in the dairy industry
- A student worksheet as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers.

Competition

- Each teacher will forward their best two submissions from Week Five by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

The Cows Create Careers team are here every day and ready to respond to any questions immediately by either emailing admin@jaydee.net.au or phoning John 0412 368 739 or Deanne 0419 878 055.

CURRICULUM AREAS

English/Literacy:

Years 5 to 10: ACELY1707, 1704, 1717, 1714, 1728, 1725, 1738, 1736, 1748, 1746, 1776, 1756

Year 11: English Unit 1: Create a range of texts, Reflect on their own and others’ text

Media Arts

Years 5 to 10: ACAVAM064, 069, 076

MaxCare
GROWING STRONGER EVERY DAY

Want to win \$1000 for your School?
Ask your teacher how by entering
one of our MaxCare
Competitions

ACTIVITY FIVE - INFORMATION

MARKETING | DAIRY CAREERS



SADA Fresh



MaxCare



Daviesway



Gardiner Foundation



Dasco



Peach Teats



Stallion



Kettridges



Nutrien Ag Solutions



Reid Stockfeeds



Vella Stockfeeds



La Casa Del Formaggio



Hills Farm Supplies



Laucke Mills



Beston Global Food Company



Norco Rural



Dairy Australia



Tocal College



TRAC



Jaydee Events

ACTIVITY FIVE - STUDENT WORKSHEET

MARKETING | DAIRY CAREERS

School Name _____

Student Name _____

Year Level _____

Select one company from the information sheet and design a new sales pitch and logo below.

PITCH:

LOGO: [Students may wish to attach the logo separately]

Research and identify three career pathways in the dairy industry using the information sheet.

Write a paragraph about those three career pathways and what the career involves:

Here are the last weights of Bright & Future our Holstein calves, please submit your final plot/graph to your teacher for assessment.

Week 5 Bright 69kg
Future 69.5kg

MaxCare
GROWING STRONGER EVERY DAY

Want to win \$1000 for your School?
Ask your teacher how by entering
one of our MaxCare
Competitions

ACTIVITY SIX - AN INTRODUCTION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

- 1. READ** Learning activity six - overview sheet
- 2. READ** Learning activity six - information sheets – for the dairy cows and for humans
- 3. COMPLETE** Learning activity six - student worksheet
- 4. SUBMIT** Learning activity six - student worksheet to your teacher



ACTIVITY SIX - OVERVIEW

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Purpose:

1. Engage the students to learn about dairy industry nutrition for both animals and humans.
READING/COMPREHENSION
2. Test the knowledge of students with an engaging learning activity/competition.
REVISION

Week six:

- This is your sixth weekly activity for Cows Create Careers. Schools can choose which week they wish to start during Term 2 or 3, 2024
- Students will need to allocate 60-90 minutes which includes reading, comprehension, research and revision.

Activities:

The students will:

- Complete two different word finds to test their learning.

What is provided?

- Two documents for students to read information about dairy nutrition for animals and humans
- Two student worksheets as an interactive PDF or Google Worksheet to complete the activity
- An answer sheet for the teachers.

Competition

- Each teacher will forward their best two submissions from Week Six by the end of Term 2 or 3, 2024 (or earlier if they wish) to admin@jaydee.net.au

Support

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ACTIVITY SIX - INFORMATION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Dairy Nutrition – For Humans

Health benefits associated with dairy foods extend far beyond building and maintaining healthy bones and teeth. Having enough milk, yogurt and cheese can also be good for heart health, blood pressure and maintaining a healthy weight.

Milk, cheese and yogurt are naturally full of important nutrients such as calcium and protein. The unique package of vitamins and minerals they provide means these dairy products pack some pretty important health benefits.

In fact, the Australian Dietary Guidelines say that consumption of milk, cheese and yogurt is linked to a reduced risk of heart disease, stroke, hypertension, type 2 diabetes, metabol syndrome and colorectal cancer – some of the main causes of death in Australia.

Here are some of the key health benefits associated with eating dairy foods

- Digestive health
- Bone health
- Dental health
- Weight management
- Muscle mass and hydration
- Reducing the risks of diseases.

Dairy Matters for Strong Bones - Milk, cheese and yogurt have calcium and protein

Most people don't think about their bones until they have a fracture or until they reach older age. However, bones are living tissue, constantly in a state of renewal, so building and maintaining bones is a lifelong matter.

Poor bone health affects 2 in 3 Australians and can lead to serious fractures which can cause chronic pain, disability and loss of independence.

The three actions for bone health are:

- Consuming plenty of calcium-rich foods, such as milk, cheese and yogurt, every day
- Participating in regular exercise and physical activity; and
- Enjoying regular and safe sun exposure for adequate vitamin D production
- Dairy foods are naturally rich in both calcium and high-quality protein, both essential nutrients for building.

Protein in Dairy Matters for Healthy Lean Muscles - Milk, cheese and yogurt all contain high quality proteins

What you eat matters for muscle health. So when it comes to muscle - milk, yogurt and cheese contain high-quality proteins (whey and casein) that provide all the essential amino acids needed to build and maintain muscle mass.

Studies have now shown that consuming milk after resistance training promotes more muscle gain than other protein sources.

ACTIVITY SIX - INFORMATION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Dairy foods have a unique structure and nutrient package

Nutrition scientists are recognising that the health effects of dairy foods go beyond just the benefits of the individual nutrients they contain. The unique 'Dairy Matrix' is responsible for the many health benefits of these foods. We now understand it is a combination of both the nutrients and how these interact with the distinct physical structures of milk, cheese and yogurt that determines a dairy food's true health effect. This is called the Food Matrix effect - the whole dairy food is greater than the sum of its parts. Dairy foods pack some pretty important health benefits and provide a unique package of more than 10 essential vitamins and minerals.

The Australian Dietary Guidelines say that consumption of milk, cheese and yogurt is linked to a reduced risk of heart disease, stroke, hypertension, type 2 diabetes, metabolic syndrome and colorectal cancer – some of the main causes of death in Australia.

Most Aussies don't eat enough dairy

Milk, cheese and yogurt form one of the five food groups that make up a balanced diet in the Australian Dietary Guidelines. Alarming, 90% of Australian adults are not getting enough dairy in their diets and are missing out on the health benefits. Milk, cheese and yogurt is part of a balanced diet and linked to a reduced risk of heart disease, stroke, hypertension, type 2 diabetes, colorectal cancer and the metabolic syndrome.

To meet the Australian Dietary Guidelines recommended serves of milk, cheese, yogurt and/or alternatives:

- Depending on their age and gender, children need between one-and-a-half and three serves each day
- Teens need 3.5 serves each day.
- Adults aged 19- 50 need 2.5 serves each day
- Women over 50 need four serves each day
- Men aged 51 – 70 need 2.5 serves each day, and men over 70 need four serves each day.

Calcium-rich

Calcium is only one of the essential nutrients dairy foods provide. Calcium is essential for building and maintaining strong bones. Calcium combines with other minerals – like phosphorus – to form hard crystals that give bones their strength. Because the human body can't make calcium, it must come from the foods we eat. If you don't eat enough calcium-rich foods, calcium will be taken from the bones to be used for other body functions, and over time bones will become weak and brittle, leading to a disease called osteoporosis. Milk, cheese and yogurt provide a convenient and readily absorbable source of calcium that contributes around 60% of the calcium in the Australian diet.

ACTIVITY SIX - INFORMATION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Nutrient Function

Vitamin A

- Essential for healthy eye sight
- Important for growth (particularly in children).

Vitamin B12

- Helps to keep blood healthy
- Assists in the formation of nerve cells.

Riboflavin

- Helps release energy from food
- Helps cells to function properly.

Calcium

- Essential for strong bones and teeth
- Needed for normal muscle and nerve functioning, and may assist in controlling blood pressure.

Potassium

- Assists with blood pressure control
- Important for nerve impulse transmission.

Magnesium

- Important component in bone structure
- Essential for energy transfer around the body.

Zinc

- Aids wound healing
- Essential for normal growth and development in bones, the brain and many other parts of the Body.

Phosphorous

- Forms an important part of the mineral structure in bones and teeth
- Works with B vitamins to release energy from food.

Carbohydrate

- Provides energy for the body.

Protein

- Needed for growth and development as well as repair to damaged body tissues
- Forms part of many enzymes and blood components, and is essential for maintaining muscles.

ACTIVITY SIX - STUDENT WORKSHEET

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Humans Word Find question

Student Name _____

Locate the 10 essential nutrients in dairy

A D V Z M U B B Z S D N L J S Y F G P D
A O T G W D B F I B N V E S C G F W H U
N I H L G B J L N Q R C O F Y P C V B H
J W S L Z W U L C P R O T E I N F V N V
S C I M I C Y X B A P V H G S F S V O S
V E K J A G U G Q V V Z P G W Q P I Z H
E S O P S G R G I X U G O O Y D H T N O
K E L M K F N S X M Y M F G I Q O A Q N
T C I H O V S E J I G I O P B C S M O G
G U H J W T I D S W D I F O M A P I H K
I R Y L S J H T N I A N G T A L H N N V
J B R V Y M T Z A F U H V A R C O B B Y
A X K E R K A R Z M Z M K S I I R 1 X D
E F F L A R F T D B I S P S E U O 2 J L
F Z G I Y I E J L F E N Y I U M U W A H
L R I B O F L A V I N U A U C H S J T I
I H T S A S S H Y J Q B L M L W N A X J
O R L Y W K V X Y I U G K P M D A E G Y
V U W M W Z F R Z P H Z G D O C L D K J
U F V A F G S B C A R B O H Y D R A T E

CAR_____ PHO_____ RIB_____ ZIN_
MAG_____ POT_____ VIT_____
VIT_____ PRO_____ CAL_____

ACTIVITY SIX - INFORMATION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Dairy Nutrition – For the Dairy Cow

What cows eat

Cows eat about 20 kg of nutritious food a day. That's equivalent to 103 baked potatoes or 720 slices of bread!

They also need to drink a large amount of water, because milk is mostly made of water. Cows can drink about 100 litres of water (a bathtub full) in a day.

There are five main types of food in a dairy cow's diet. These are:

1. **Pasture:** Plants grown in grazing paddocks that can be a mix of grasses such as ryegrass or protein-rich legumes such as clover. Fresh pasture is the largest part of an Australian dairy cow's diet.
Types of pasture may include: Clover, Ryegrass, Kikuyu and Paspalum
2. **Hay:** Extra pasture that's been dried, cut and made into bales to feed to cows later.
Types of hay may include: Lucerne, Oaten and Vetch
3. **Silage:** Pasture that's been cut and stored while it's still green to retain the nutrients.
Ways silage is stored: Bale, Pit and Stack
4. **Grains:** Cereals such as wheat and barley provide more energy than pasture and help cows make more milk. Grains can be crushed and mixed with vitamins and minerals to form pellets.
These are usually given to cows at milking time.
Types of grains: Wheat, Barley

5. **Forage crops:** Special crops are sometimes grown for the cows to graze on during summer.
Types of forage crops may include: Maize, Millet, Turnips and Oats.

After each milking session a cow is typically rotated to a new paddock so she can enjoy fresh pasture. This rotation system allows grass to regrow and ensures that cows are always eating the best grass.

Farmers often need to purchase additional feed to supplement what they can grow, especially during periods of climate variability and drought, which can affect water use and pasture growth. Purchased feed can represent over 30% of dairy farm costs – the largest single cost incurred by most farmers.

Feeding the herd

Feed costs are the biggest variable cost on a dairy farm. For this reason, efficiently feeding the herd is a key factor affecting dairy farm profitability regardless of the feeding system utilised.

Key points for farmers to consider when feeding cows

Farmers should:

- Create a sound monthly milk income and feed budget to guide decisions
- Buy feeds based on quality and value
- Convert feed into milk efficiently, minimising waste
- Manage pasture according to best management principles.

ACTIVITY SIX - INFORMATION

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

The three main aims of farmers

Farmers should:

- Design a feed plan for their milkers that generate the best possible return on investment
- Protect the farm's long-term productivity by maintaining good cow body condition and health
- Protect long-term productivity of pastures, enabling them to bounce back quickly when conditions eventually improve.

Home-grown feed

Maximising the production of home-grown feed is essential to improve the resilience and profitability of farming systems. Research from across the world in several countries, including Australia, has repeatedly demonstrated the link between increased levels of home-grown feed and higher profitability. This applies regardless of the feeding system or level of intensity of the farm.

In the vast majority of cases, home-grown feed is cheaper than imported or bought-in feeds. It is therefore critical to the sustainability of farm businesses to maximise the production and utilisation of this resource.

Supplements

Home-grown feed rarely fills all of the feed gaps on Australian dairy farms and so imported supplements are also used. These can be very profitable if used correctly and efficiently.

Dairy Australia's Designing balanced milk diets fact sheet outlines how to maximise milk income minus feed costs in the herd and helps to design high-quality diet for milkers that are well nutritionally balanced.

A diet for milkers that is good for the herd's productivity and health plus the farm's bottom line is:

- Optimal for milk income minus feed cost
- Nutritionally balanced
- Within the cow's daily appetite limit
- Palatable.

To assess your herd profile to set a realistic milk yield target based on cow type, body condition and stage of lactation, designing a diet for milkers is a 3-step process:

1. Calculate cow nutrient requirements
2. Select feeds
3. Formulate diet.

ACTIVITY SIX - STUDENT WORKSHEET

DAIRY NUTRITION | FOR THE DAIRY COW AND FOR HUMANS

Dairy Cow Word Find question

Student Name _____

Locate the 16 types of feed from the five main food types in the diet of a dairy cow. Tip: these are marked in bold underneath each food type.

N F L D T J M M S R K T N H B W P F E R
W F C J S C F G N T D H F B C G C P D G
R M B Z P J C E L I A I Q N S K R E O H
Y H K V T B R L P U Q C O I N W L T Y V
I K H C E M V V O G C J K Q M A K V G N
I H V T V T P B Q V W E D I U D G R Q I
B A R L E Y C O D R E Q R P H M M J M G
T U R N I P S H K Z L R N N I I A M S C
X V V R P Z S Z B K G O U F E L I H M V
L D R V W M E A L A J Y A Z X L Z X R R
P A S P A L U M D J L W R T N E E Q V V
V Y J P N Q N K L D N E W V E T A F H O
J B U F A C E R I A Y W H K T N H B F F
X W X R V M L N P K T W I G T I V E F Z
P H W N O W C G W N U G E Y Q C J A D B
U E A G O I Y T I O D Y S I S Y I K C G
G A E X A L G V L J N F U M A S O P A W
N T R T T W C L C V L J J R X L N T I G
W Y H R S W X D E C O L K P E Y Z S W T
V H D J J R Y E G R A S S Z X V D S A O

RYE_____

PAS_____

LUC_____

BAL_

TUR_____

CLO_____

KIK_____

OAT_

BAR_____

MIL_____

OAT_

PI_

VET_

STA_

MAI_

WHE_

3 - CREATIVE PHOTO TASK

This task is asking for you to show us your creative side.

Take a creative photo of:

1. Your team with the calves. As an extra, we would like you to include the bag of milk powder that has been sponsored for your school.

OR

2. Yourself or your team with some dairy products from home or school.

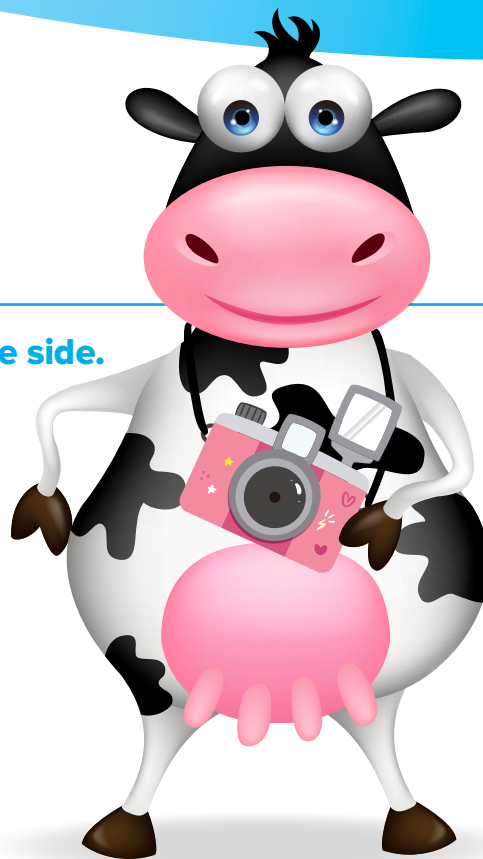
What makes your photo stand out from the rest? Make sure you have a point of difference.

Remember this task can be customised depending on the COVID rules in your school.

Outcomes presented here are indicative, and will vary depending on the direction individual projects take.

ACARA outcomes – Years 5 and 6

Media Arts [ACAVAM116](#)



ACARA outcomes – Years 7 and 8

Media Arts [ACAMAM069](#)

ACARA outcomes – Years 9 and 10

Media Arts [ACAVAM128](#)

4 - STUDENT EVALUATION – ENTRY AND EXIT

The survey information for Cows Create Careers is important to Jaydee Events Pty Ltd and their sponsoring partners to gain an understanding about student learning, student involvement and student interest in the dairy industry.

Submit your student evaluation data using these links:

Entry surveymonkey.com/r/2024cccstudententry

Exit surveymonkey.com/r/2024cccstudentexit

If you do not have access to a computer or the internet to complete this survey online then please ask your teacher for a physical copy.

Remember to answer the questions independently.

5 - FINAL TEAM CHECKLIST

Teachers should select their best team to submit for assessment. If a school has both juniors and seniors participating in the project they can submit the best team's work for each section. All student surveys will be conducted online using a Survey Monkey link.

Team name: _____ Year: _____

Student names (for certificates, please write neatly!):

Has your team submitted the following work?

Missing assessment work will be recorded as unsubmitted and will not be followed up.

Please tick what your team has submitted

- Activity 1 - An Introduction to The Australian Dairy Industry & BioSecurities | Why it Matters
- Activity 2 - Technology On Farm | Computer and Robotic Technology
- Activity 3 - Natural Resource and Environment | Sustainable Farming
- Activity 4 - Farm Safety | Keeping our Communities Safe
- Activity 5 - Marketing | Dairy Careers
- Activity 6 - Dairy Nutrition | For the Dairy Cow and for Humans
- Take a Creative photo
- Student evaluation - entry and exit - Survey Monkey link

Complete this as a checklist for your team, and submit with their work.

Mail – Express Post your work on a memory stick to: Cows Create Careers, PO Box 18, LOCH VIC 3945

Mail or digitally submit your assessment work

Save all your files with your team name and the type of activity as the name of the file.

Submission options

Dropbox – Email nicki@jaydee.net.au to request your Dropbox link, then simply upload your files.

Google drive links – Are you using Google as your mail server? Simply attach all your large files to an email and Google will send via Google drive links

CONTACT DETAILS

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JAYDEE EVENTS PTY LTD

PO Box 18, LOCH VIC 3945

M 0412 368 739 (John)

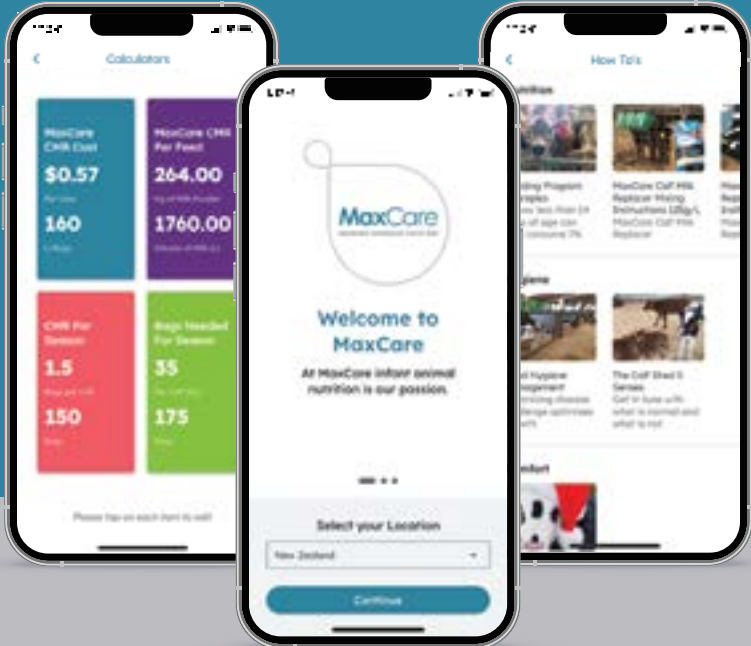
0419 878 055 (Deanne)

E admin@jaydee.net.au

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