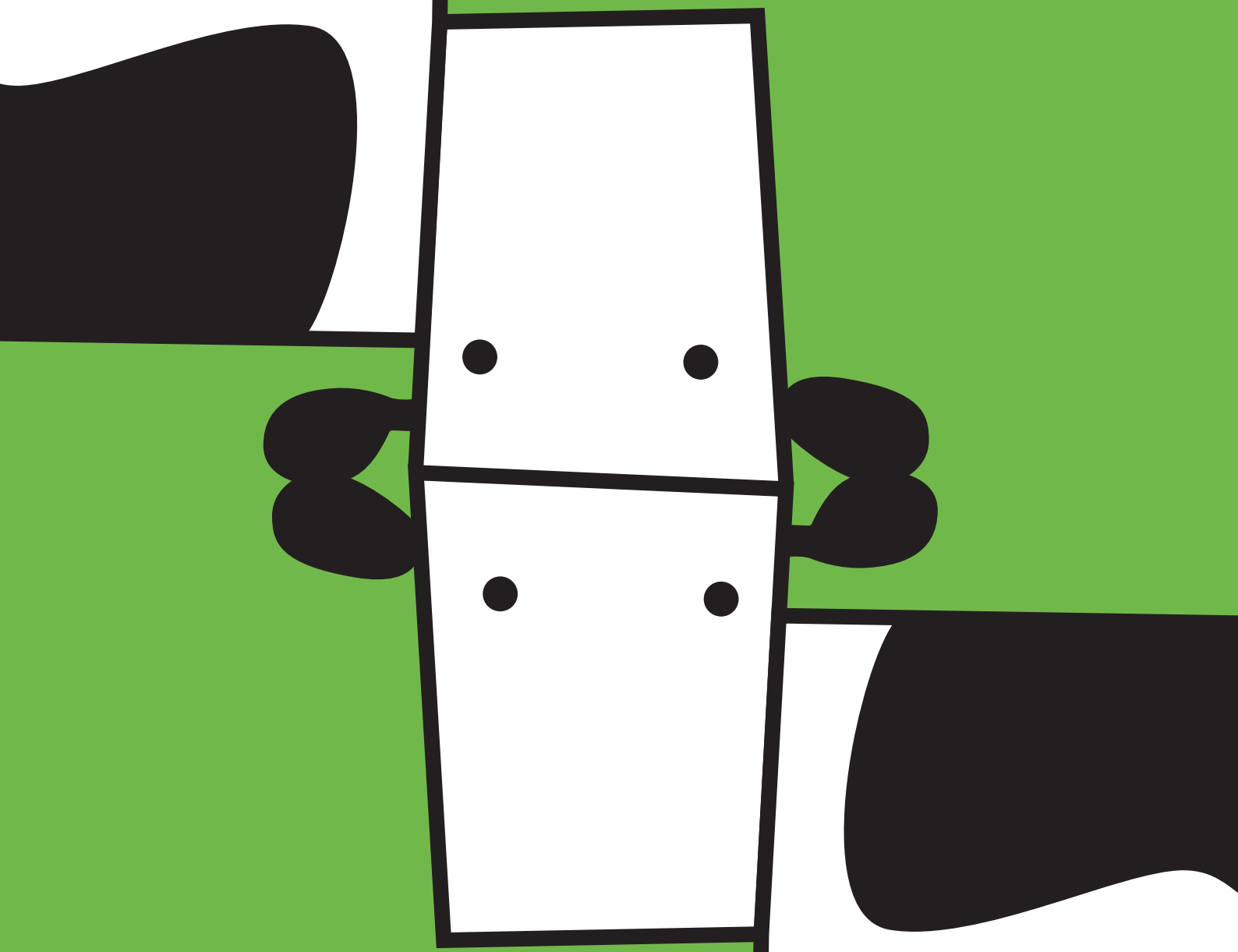
cows create careers

Dairy Australia

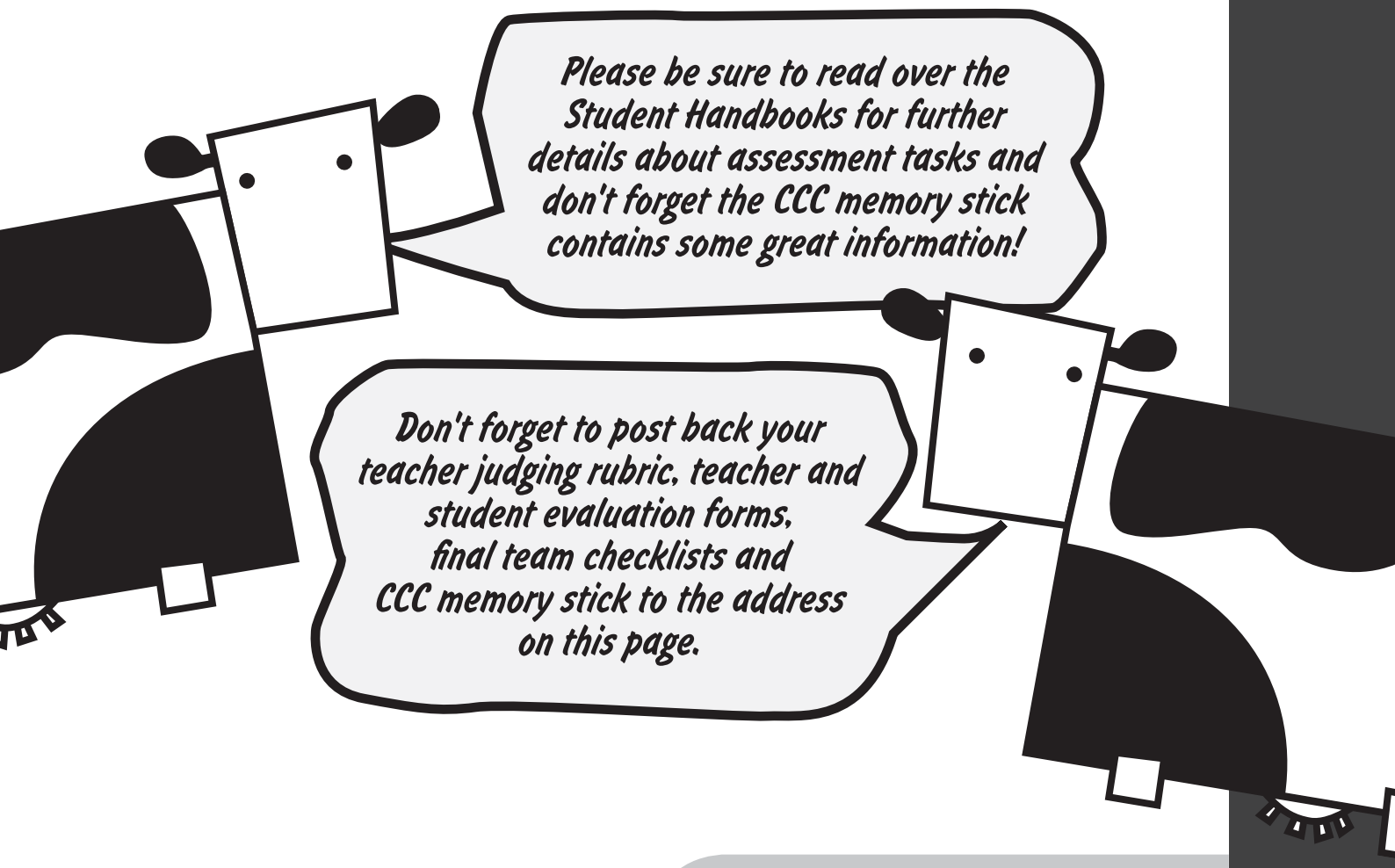
MANUFACTURING MODULE



Teacher Handbook

Contents

Introduction and Project Outline	2
How to Get Started and School Resource Kit	3
Curriculum Connections	4
Food Technology and Design, Creativity and Technology Elements	5
Student Evaluation Process and Weblinks	6
Teacher Evaluation Form (Exit)	7
Teacher Judging Rubric	8



Cows create careers | Dairy Australia
MANUFACTURING MODULE

Contact Details:
Cows Create Careers – Manufacturing Module
Dairy Australia - National Project Co-ordinators
John Hutchison & Deanne Kennedy
Jaydee Events Pty Ltd
A: PO Box 18, LOCH 3945 P: 03 5659 4219
M: 0412 368 739 (John) & 0419 878 055 (Deanne)
E: admin@jaydee.net.au

Introduction

Thank you for participating in the Cows Create Careers manufacturing project.

Aims of the project are to:

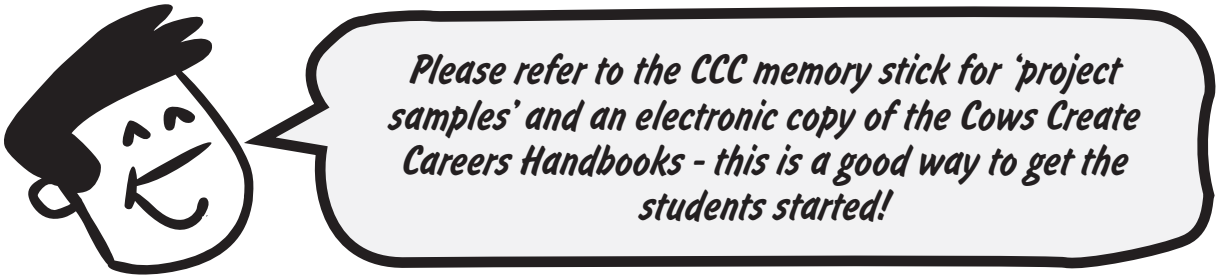
- Introduce the dairy manufacturing industry to secondary school students in Years 9 - 11
- Introduce students to pathways in the dairy manufacturing industry and its many related career and education opportunities
- Give students a hands-on experience working with dairy products
- Provide industry advocates to inform, encourage and support students
- Provide the opportunity for a school visit or manufacturing plant visit
- Motivate students to submit assessment tasks and outline their learning at the Presentation & Awards Ceremony for the region
- Provide incentives through a Cows Create Careers competition
- Celebrate student performance and reinforce career opportunities at the Presentation & Awards Ceremony.

Project Outline

Cows Create Careers is an innovative way to introduce the dairy manufacturing industry to secondary students. It aims to cater for students and schools at many levels.

The following considerations took priority in the project's design:

- The project must be highly motivational
- The project must cater for many learning styles and allow for differences in student entry levels
- Salient curriculum features of the project must be made explicit
- Evaluation and assessment opportunities must exist for all aspects of the curriculum
- Provide the opportunity for a school visit or manufacturing plant visit
- Two curriculum based aspects of the project are compulsory (Dairy Newsletter, Double Page Recipe with Photographs)
- The rich context for the project will ensure integration across Key Learning Areas, especially Science, English, Food Technology, Humanities and ICT (Information Communication Technology)
- The project will provide a broad range of thinking skills, from transference and comprehension of knowledge through to higher order skills such as analysing and synthesising data, forming judgments and making predictions
- Beyond evaluation/assessment at school level, the criteria for selecting winning teams and awarding prizes must be clearly stated. Such criteria should link strongly to project aims and student learning.



How To Get Started

In schools, the preparation period should begin immediately. If students can start early on their assessment tasks, it makes the timelines easier to achieve!

A smorgasboard of activities and research materials is presented to assist students' learning. The direction taken in schools will vary depending on which elements of the resource materials are focused on at school level.

The project is designed for teams of 2 - 3 students. In many classrooms this will mean teams working on their projects separately. Elements of the project include tasks in a) English, b) ICT, c) Food Technology, and d) Science. School project co-ordinators (ie. Food Technology teachers) might be well rewarded by approaching computer teachers to provide support for the project during computer lessons, the English teachers to set and evaluate English aspects of the project (ie. report writing and writing instructional text) and so on.

The manufacturing research topics incorporate the research component of Cows Create Careers. Students in teams are asked to link online research with information provided by industry advocates, and classroom teachers. Teams choose their manufacturing research topic from the list for The Dairy Newsletter Task and are provided with some online references.

School Resource Kit

The Cows Create Careers - Manufacturing project aims to place an inquiry approach to learning at the students' fingertips. This approach motivates students to inquire, and places all necessary resources within their reach. Through co-operative group work, and the support of teachers, industry advocates and online resources, teams work towards goals that are worthwhile and achievable.

Built into the project are many opportunities for evaluation and assessment of student learning. There are also opportunities for teachers and students to evaluate the Cows Create Careers project itself.

The School Resource Kit consists of:

Teacher's Handbook

Student Handbook - Year 9 - 11

Project Timelines

Project Contact Details

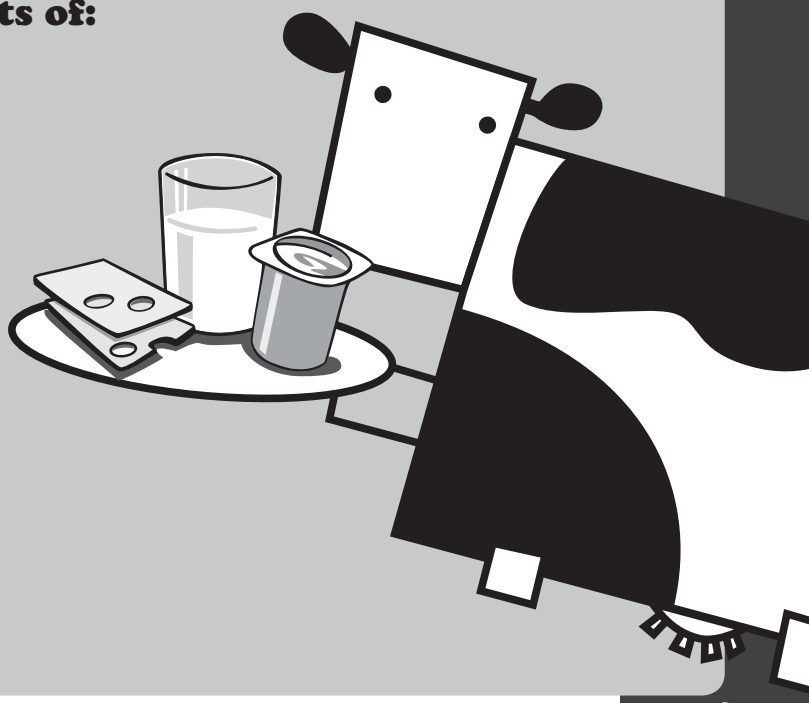
Cows Create Careers

Careers in the Dairy Industry

DA Fact Sheets & Information

Poster: Farm to Plate

Poster: 3 Serves of Dairy Every Day



Curriculum Connections

Cows Create Careers is a model of integrated curriculum that fits easily within the curriculum guidelines for each state.

Thinking levels (bloom): Knowledge (facts); Comprehension (understanding)

Gardner's MI: Linguistic (spoken/written language); Spatial (design); Mathematical;

Application (use); Analysis (explain); Synthesis (combine); Evaluate (justify)

Humanities (SOSE)
- Rural communities
- Industry
- Environment
- Careers

English
- Writing design briefs
- Writing instructional texts
- Whole page design/layout
- Speaking and listening

Design, Creativity and Technology
- Investigating and designing
- Producing
- Analysing and evaluating

ICT
- Word processing/ whole page design and layout
- Internet research
- Digital photography

Science
- Agricultural
- Food technology
- Environmental
- Scientific methodology
- Scientific research

Food Technology
- Design brief
- Skill in planning
- Skill in implementation
- Skill in presentation
- Skill in evaluation

Socio-emotional
- Organisation
- Co-operation
- Persistence
- Confidence
- Responsibility

Assessment/ Evaluation
- Written project
- Design briefs
- Co-operative groups
- Surveys

Classroom processes
- Flexible learning
- eLearning
- Learning together
- Integrated curriculum

(analysing data); Kinaesthetic (going outside) Naturalist (environmental)

Food Technology and Design, Creativity and Technology Elements

1. Design Briefs

The design briefs should include the following:

- Information related to who, what, when, where, why and how in the development of design brief(s)
- Relevant evaluation criteria
- A range of research (acknowledge sources) and show a development of ideas (ie. first idea is never the best idea) and justifications regarding decisions made by the group
- Reference to and appropriate knowledge of safe, hygienic food preparation and processing techniques
- Appropriate choice of tools and equipment
- Clear details on how the final product reflects the design brief
- Assessment of product including a degree of creativity, degree of difficulty, perceived appeal in 'the market place' and effectiveness of the design brief as a plan.

2. Creativity & Technology Elements

(From Level 5 VELS (Victorian Essential Learning Standards)

- In teams, develop innovative solutions in design and technology contexts (for example, creating a low-fat yogurt drink and design four, three-dimensional, environmentally-friendly packages). Evaluate your decisions with reference to design brief specifications.
- Students further explore the properties and characteristics of materials/ingredients, and carry out tests to determine their suitability for intended products and/or systems.
- Students learn how design elements and principles can enhance their design work. Students refer to design briefs to consider and investigate aspects of function and aesthetics.
- After selecting and justifying the best design option, students develop a logically sequenced outline of the major stages of production and a list of materials/ingredients and/or systems components and quantities required. Concentrating on the aesthetic, functional features and/or performance of the product/system, students consider how the product, and the processes used to develop it, could be improved, and compare it to other similar products/systems. Students discuss and develop evaluation criteria to analyse and evaluate their completed product/system.

Student Evaluation Process

Cows Create Careers Manufacturing provides many opportunities for teams and individuals to be assessed. As the project is exercise based and involves many hands-on learning activities, it is important that student processes, as well as product (work produced), are evaluated.

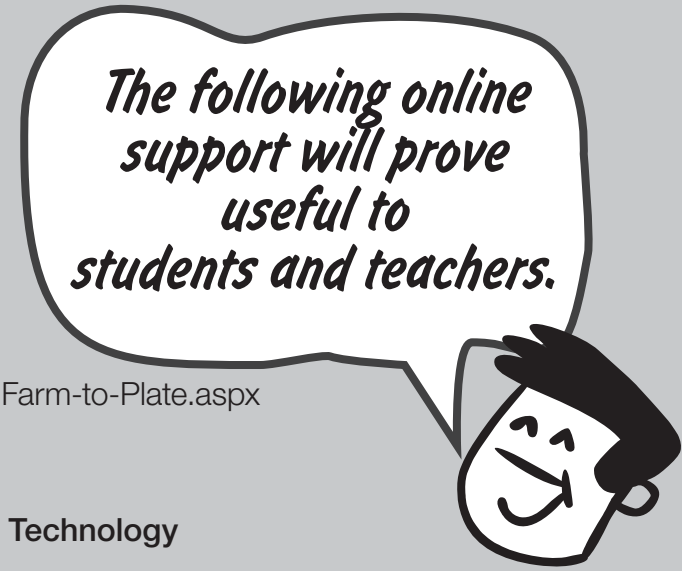
Processes that can be assessed through observation, interview, tasting, check-listing and anecdotal recording include:

Research skills	Food preparation	Design skills
Speaking and Listening	Working in teams	Independence
Taking responsibility	Creativity	ICT skills
Critical-thinking skills	Internet skills	Report writing
Writing factual texts	Summarising	Instructional text writing

Products that **students** will submit for assessment include:

- The Dairy Newsletter
- Double Page Recipe with Photographs (include design briefs)
- A Funny Photo of your Team with their Dairy Recipe
- Student Evaluation (Entry & Exit) Forms

Weblinks



Careers and Training Pathways in Dairy
National Centre for Dairy Education Australia
www.ncdea.edu.au
Dairy Australia
www.dairyaustralia.com.au
www.dairy.edu.au/discoverdairy/Students/From-Farm-to-Plate.aspx
Rural Skills Australia
agrifoodcareers.com.au/home.php?id=1
The Australian Institute of Food Science and Technology
http:/www.aifst.asn.au
Career Harvest
www.careerharvest.com.au

Teacher Evaluation Form

The Exit Survey is to be completed on completion of the project. This survey can be completed using our Survey Monkey link or by photocopying this survey form. The Survey Monkey link will be emailed to you directly.

Exit Survey (Please circle)

TEACHER NAME _____

SCHOOL NAME _____

Has the Cows Create Careers – Manufacturing project been implemented as part of the school curriculum? YES / NO If yes, what subject?_____

Please tell us about your overall satisfaction with your participation in the Cows Create Careers – Manufacturing project. Please circle your response:

Poor Good Very Good Excellent

As a result of this program, please identify the key outcomes for your students

_____

_____

To what extent does the Cows Create Careers - Manufacturing curriculum package support what you are trying to achieve? Would you recommend any changes to the module?

_____

_____

_____

What information could be added at the start of the program that would have improved the program's success?

_____

_____

Given a **similar dairy industry program,** would you be involved next year? **YES / NO**

How did you find the support provided by the

Cows Create Careers organisers _____

Industry advocate _____

Please answer the following questions, along the scale of 1 to 5, where 1 is strongly disagree (SD) and 5 is strongly agree (SA).	SD				SA
I know a lot about the dairy manufacturing industry	1	2	3	4	5
I know a lot about careers pathways in dairy manufacturing	1	2	3	4	5
Dairy foods like milk, cheese and yogurt are good for my health and nutrition	1	2	3	4	5

If this project has been covered in a school bulletin or newsletter could you please specify the name of the bulletin or newsletter and the month that it appeared?

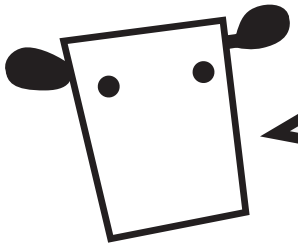
_____

Do you know of any students who have been motivated to explore the dairy manufacturing industry due to the Cows Create Careers project? **YES / NO**

If yes, in what way?_____

Please photocopy this page...

Teacher Judging Rubric



This is the official judging sheet for Cows Create Careers - Manufacturing Module. Teachers must fill in the school assessed section for each competing team, then submit with the team's work for judging by CCC judges.

Team Name _____

School _____

School assessed (*IMPORTANT: SEE BELOW)

Process	Description	Maximum	Score
Dairy Recipe (Product): Innovation and creativity	Successful design will be creative, new and exciting	10%	
Dairy Recipe (Product): Taste Test	The better the taste, the higher the score!	10%	
Dairy Recipe (Product):	This is about presentation – if it says 'eat me' we will	10%	
Marketability	Will the hungry populace embrace the product?	10%	
			/40

CCC judged

Process	Description	Maximum	Score
The Dairy Newsletter: Manufacturing Research Topics	Informative and entertaining 2-page newsletter with photographs and linkages to career pathways	20%	
Dairy Recipe (Product): presented as a double page recipe with photographs	Design and layout, innovation, quality initial plan to final design	20%	
Design Brief: shows development of ideas from initial plan to final design	Shows development of ideas from initial plan to final design	15%	
Photo of your Team with their Dairy Recipe	A fun and innovative picture of the student team with their Dairy Recipe	5%	
			/60
			Total Score

*Teachers are required to fill in the school-assessed section and return with the student work (per team). It is strongly recommended that, for the school-assessed section, teachers score their best team/s 40/40, then scale their marks for the following teams accordingly. This will ensure the best performed team for each school will have maximum chance of winning when competing across schools.

Please photocopy this page...

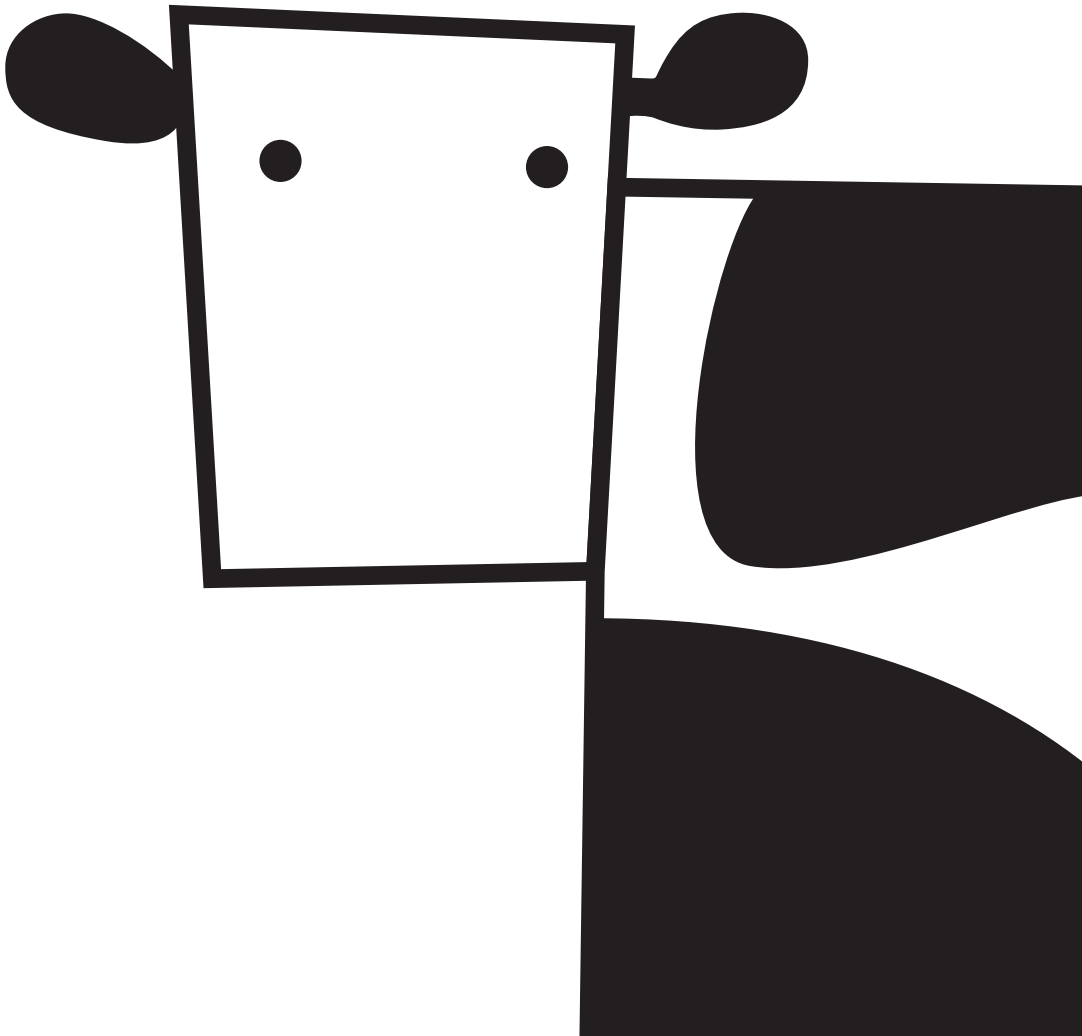
Cows create careers

Dairy Australia

MANUFACTURING MODULE

Dairy Australia is the national services body for the Australian dairy industry. Our role is to build a sustainable and internationally competitive industry and to provide solutions that help farmers adapt to an ever-changing operating environment.

The industry-owned corporation acts as the collective investment arm of the dairy industry, investing in essential research, development, extension and industry services that individual farmers and dairy companies could not efficiently undertake themselves.

Find out more at **www.dairyaustralia.com.au.**

www.dairyaustralia.com.au
Dairy Australia, Level 5, IBM Centre,
60 City Road, Southbank, Victoria, 3006
Tel: 03 9694 3777