



MILK

Milk

All Levels



LISTEN TO THE VIRTUAL EXCURSION



Themes

Sustainability

Ethics

Profitability

Marketing

Social values

Business decision-making



Download and listen to the audio of the *From Paddock to Plate Milk Virtual Video Excursion* by clicking this [link](#).

Assigning the task

EXPLAIN to students that you would like them to create a podcast or an article using the audio file or transcript as their raw material. Discuss that to create a podcast or an article, about $\frac{3}{4}$ of the time a writer/producer spends is in finding material (research) and planning. The last quarter is actually spent with the microphone recording or writing!

Explore WHO the audience will be (and be specific): kids our age, our parents, the grade 5s/ 7s / 9s, shoppers at our farmers market, local restaurants. Ask students how they will use language, sound design and other elements such as humour and character to appeal specifically to this audience.

Choose a podcast format such as an interview, narrative, or news recap. Set an agreed length, e.g. a 3-5 minute podcast or a $\frac{1}{2}$ page article with one photograph.

Identify the goal or purpose of the podcast or article. Is it to generate leads for a business? Does it persuade people about an important message? Or is it designed to be fun but informative?



Students REVIEW the themes and topics of the audio and SELECT one that they would like to make a persuasive or informative podcast about.

Guiding question: What is ONE aspect of this topic that you think people ought to know more about?



Students WRITE down the plan and agree on it with the teacher before they start production.

Australian Curriculum Guide

English

Plan, draft and publish persuasive and informative texts

The Arts / Media Arts

Creating media productions

Science

Communicating science concepts and information

HASS / Business and Economics

Businesses and careers





Transcript: Milk Podcast Pack (continued)

If students engage with the topic, try the suggested lessons at the end of this document that are perfect for school or remote learning.

Interview transcript

Mat & Sue Daubney

Dairy farmers, Bannister Downs Dairy, Northcliffe, Western Australia

- LF Hello, I'm Louise FitzRoy, and today I'm on a dairy farm to show you firsthand, the complete from paddock to plate journey of milk, from cow to carton. So let's find out how these dairy farmers use innovation to milk their cows, as well as process and package their fresh milk utilising a unique marketing and branding strategy.
- MD 00:19 We've been here for near on 80 years. Grandparents were a typical migrant family. Came out from England. Their idea was a good day in Australia. Even a bad day in Australia was better than a good day in England for them. So that's where they started out. And from there, they started with one hundred and thirty acres, to today. I'm the third generation and it's twelve hundred and fifty hectares now that we own. And we milk around 900 cows every day with a herd of about 2000.
- MD 00:48 All our cows we've bred on our farm. A lot of our cows are bred artificially now with AI, which has been around for a long, long time. And it allows you to use genetics from anywhere around the world. We've got a lot of different breeds that we use, including Holsteins and Jerseys. Holsteins are the big milk breed. You've got Jerseys which are for butter fat to put cream in the milk. And we also use some other breeds like Ayrshires and a new breed, Aussie Red, which the Australians, we bred ourselves. So we use a bit of that as well. We blend those breeds together and we believe that that creates the cow that best suits what we do for grazing grass and turning it into milk.
- MD 01:35 We've got cows calving at the moment. Those calves, they're baby ones, a day old. They stay with their mother for the first couple of days. And then we'll bring the cows to the dairy and we take the calves to a nursery, where they stay there for 12 weeks. And through that time, they'll be raised and they eat grain and hay and milk and they probably get cared for better than what most people look after themselves.
- MD 02:00 When they're 16 months old, they will be mated and in calf and then at 24 months or just over two years old, they'll return to the farm and start their life as a dairy cow.
- MD 02:05 We can identify every animal that is born in Australia. So if that animal was exported overseas, for example, they could read that number that's in that calf. And it's just a microchip or a button that goes in their ear that someone could read that on the other side of the planet, if you like, and they could find out where that calf was born and all of its history from the time it was born to where it has arrived to. So it's really important in traceability and it's food security for people.
- MD 02:35 We mainly make hay now. We used to make silage a long, long time ago. We've given that away. And part of that, we believe hay is the best for our product. And we also believe that using a lot of plastic or a lot of resources to preserve stock feed is not the best way for us to go. So we really focus a lot of effort



Transcript: Milk Podcast Pack (continued)

on trying to grow grass all year round, and that creates a consistent product.

- MD 02:59 As a farmer, you want to look after your farm, because you're only here to look after it for a little while until the next person gets it. So we, as a dairy farm, we don't we don't damage a lot of the environment or cause any major harm to it. It's very much in the case of working with what you have. There's a lot of research now done going into reducing emissions from dairy farms or from cows particularly, which is a bit of a tricky one. But there's a lot of a lot more R&D going into that now. Dairy farming is very sustainable in terms of the system and the impact you have on the environment. Like what we do has a minimal impact on the environment and it creates a product that everybody wants every day.
- MD 03:40 Our first cows will arrive at the dairy at three thirty. A lot of them will start to make their own way up. But we do go out and round up the lazy ones that don't want to get up out of bed. So we put them all in the yard and we start milking at five o'clock. It's around a two hour process in our dairy, which in this dairy that we have milks 90 cows at a time. And so it milks four to five hundred an hour depending on how fast you milk. While they're at the dairy they also get some grain, which is just to help them with their production and helps look after them a little bit. A special treat for turning up to be at the dairy.
- MD 04:20 From there, they'll go to another fresh area of grass. Every 12 hours they go to a new area of grass, which again, is all about making it interesting and make them want to eat and want to produce. So every 12 hours you try to milk a cow. That's the best you can do for the cow, and it's their ability to give the most milk is every 12 hours. If you milk them every 12 hours.
- MD 04:33 In their early lactation cows can give quite a lot of milk. They can give up to 60 litres per cow. Depends how much you feed them, how much you want them to push that. But generally, as an average, cows will produce around 20 to 25 litres a day.
- MD 04:47 Our dairy is a little bit different. It's a rotary dairy and you also have herringbone dairies. This dairy that we milk in, like I said, it milks 90 cows at a time. It's a relatively simple system and basically you're just extracting the milk from the cows with vacuum and pulsation. So it gently squeezes or massages each teat to take the milk out.
- MD 05:20 The newest innovation now in dairy is robotic milking. So it's all fully automated and the cows come to the dairy whenever they want and be milked by a robot, which is a really interesting concept. And the first one has just been built in Australia.
- MD 05:35 A big part of the reason for doing dairy is for reasons other than money. If you enjoy what you do, you're happy to go out and do it. I've got an uncle. He's 86 years old. Every day he's gone out there for reasons other than money to farm. So I hope that I can do that as well and continue that way. And I think it is sustainable, while you enjoy what you're doing. Obviously there is a commercial aspect to our business as well, and you do need to make money and all the rest of it, but first and foremost, if you enjoy what you do, I think you'll continue to make it work.
- MD 05:59 Animal welfare has become a really big topic in farming generally. And in dairy farming, just like every other business, we've got to demonstrate how we look after our animals. And I mean, it's in our interest as a farmer that we want to care for our cattle. Like I said, we've got cows now that are 18 years old. They arrive, they stay here, they live here as long as they like. But it is no doubt, it's one of the biggest issues facing a lot of farmers within Australia and we've got some work to do to show people that what we do is done right.



Transcript: Milk Podcast Pack (continued)

- MD 06:42 You need a lot of different skills to be a dairy farmer, but some really important things you do need, one, is an alarm clock. That's the main one you need. The skills, well you pick them up as you go along. A big one is probably looking after cattle. The cornerstone to your business is to making sure your cows are well-fed, well cared for, your calves are raised well and the people you have around you care about what you do. And I think I'm really lucky because I do have that.
- SD 07:05 We're sitting around the table and trying to work out what opportunities there could be for us because basically, financially, as dairy farmers alone supplying multinational companies, we had no control over what went out of our farm gate. And we were just trying to find ways to make it a motivating and exciting thing to do. We were looking at bottling our own milk, and so even then we had to consider that we could do something better than what was already available. Got on the Internet, had a look around and the next thing we know, after business plan and a little bit of research, we had the Swedish representative from the company sitting around our kitchen table discussing with us the opportunities that we could have to use this packaging.
- SD 07:50 We knew that there was an element of risk involved, but we could see that there was huge opportunity because it was better than what was already out there. We went ahead and got this machine. It was the first one in the Southern Hemisphere. I learnt to change fibre optic cables, program flow metres, do all sorts of things that I had no idea about. But they're things that you do at 1:00 a.m. in the morning when the machine's broken and you've got to fix it.
- SD 08:14 The packaging is made from chalk, which there's 50 thousand tonnes per capita in the world today. So it's quite an available resource. And the concept from Sweden, from Ecolean, is that it's like an egg shell in that if an egg shell can hold liquid and that's made from calcium carbonate or from chalk, that's where the initial thinking came for this packaging. And so it will actually break down back to the earth and there's no harmful emissions in its manufacturing process.
- SD 08:34 The packaging image and branding and all that started with a photo that I took of a cow, Heather, out my kitchen window and we sort of developed and she's become the icon cow of our company. She was actually a bit mad, but that's why she took a good photo, because she was very responsive. We do 90,000 litres a week. And in our first year we were doing three thousand litres a week and we were exhausted and we thought, oh my gosh, we're just doing so much and now we're doing 90,000 litres a week and there's some big companies that probably do that in an hour. So it's all relative. But for us, it's about making the best quality product that we can so it doesn't matter how much we produce. It's just got to be the best that we can make.
- SD 09:19 The milk comes about 10 metres into our processing area and we'll be processing fresh while the cows are still being milked in the morning. So literally, it's packed within hours of leaving the cow.
- SD 09:26 It's been an interesting exercise because we don't have a marketing company or a marketing branch. We don't have any sales representatives. The most powerful branding that we have is word-of-mouth, and that's from people's experience with the product telling other people about it. We do dip our toe in the water with social media. We have had a group going for ages, but I found out the other day that it should have been a page. So we've converted it to a page and I think this morning there was about 550 people liking us. So slowly, but surely. We just want to make it a really positive social media experience and so far it has been.



Transcript: Milk Podcast Pack (continued)

- SD 10:07 At the moment we're absolutely flat-out with the products that we do. We have a range of seven Bannister Downs products, and then we have two Betty's Milk Bar products. We don't really have any space in our week to do more. But we do have plans for more space and more time in a new facility and then we'll be able to grow a bit more. Although my belief is on doing a small number of products in your range and doing it really well.
- SD 10:50 Part of our work culture, and when we bring people in, absolutely paramount is food quality and food safety, equal to. And we don't cut any corners, and if anybody has concerns about somebody taking shortcuts, or whatever, that no one will tolerate it because it's just not what we do. We all want to put what goes out that door into our own mouths so that's how we treat it.
- SD 11:08 The interesting thing is that we say our general milking herd is about 850 cows. And we used to employ about three or four people when we were farming. We now still milk about 850 to 900 cows, but we employ 78 people, so this side of the business and this vertical integration has really generated an awful lot more cash flow and employment. The margins are really tight. You have to run your business really closely, but that's a challenge and that's what makes it exciting.
- SD 11:40 I can't call it organic milk because we're not certified, but as with a lot of farmers in this area, we really respect our ground, our animals, and everything about it. So we are always looking for minimal intervention. And we're looking for something that we would be proud to eat ourselves. We're not going to stack something up with chemicals and ship it off to someone else. It's exactly what we want to put on our kitchen tables.
- SD 11:55 Milk is just such a great way, like when you're hungry, it really makes you feel full and that's because there's lots of proteins and enzymes and fat. And you do need fat for all your joints and everything to work, and at the same time it tastes really good. You've only got to see a teenager with a litre of choc milk and it doesn't take very long to go down.
- SD 12:22 We do a really different pasteurising technique. Pasteurisation is a really important thing that was invented by a gentleman called Louis Pasteur. The reason why it came about is that they found that people were getting sick from drinking raw milk or unpasteurised milk and it took quite a while to sort out. But basically there's toxins in there such as salmonella, e-coli, listeria. They're sometimes there and sometimes they're not, but you don't know. And by pasteurising you make sure that the toxic bacteria are killed. There's all different sorts of pasteurisation. The most common one is HTST, which is high speed, high temperature. And basically milk is heated up for only 15 seconds, but to about 72 degrees and some companies will go higher to be on the safe side. And that makes sure that all of the toxic bacteria are killed and at the same time it does damage some other unharmed bacteria. So we've decided to go down the pathway of doing batch pasteurisation, which we only heat it to 65 degrees but we have to hold it there for 10 to 12 minutes. So it's inefficient and it's labour intensive, but at the end of the day the milk has not been exposed to high temperatures. And quite often for the heat-sensitive enzymes and proteins, about 68 degrees is the cut off and then they'll be denatured or damaged. You know, those enzymes and proteins are nutritional.
- SD 13:48 It's really important that people understand where their milk comes from, because as generations are going along and urbanisation is occurring, people are not so much in touch with farming and agriculture. And years ago, everybody knew a farmer, or was related to a farmer, or there was some connection and there was a level of understanding of what was involved with farming. However these days, our urban lifestyle is so commercial and things are so available and so pre-packaged, that you can



Profile: Milk Podcast Pack (continued)

understand how a child could miss the whole concept of where these things are coming from because so much food does come from a machine. It's really important to re-establish the connection for kids with where it's actually coming from and what's involved.

SD 14:22

A dairy cow needs lots of water. A dairy cow drinks at least 200 litres of water a day. She likes lots of shade. She likes a bit of palm frond, you know, a bit of cooling, because they do not like the heat at all. But most of all they love grass, so you need to have a lot of it.

Profile: Mat & Sue Daubney

Career: Dairy farmers

Job title: Owners, Bannister Downs Dairy Farm

Mat and Sue Daubney are innovative dairy farmers based at Northcliffe in the South West region of Western Australia. After years of grappling with tough milk prices, they took it upon themselves to process and package their own branded milk and serve direct to customers from the farm using sustainable farming methods and environmentally-friendly packaging.

What started you off on this journey?

Founded in 1924 in Northcliffe by pioneers Edith & James Daubney, Bannister Downs Dairy Farm was named after Edith, whose maiden name was Bannister. Nearly a century later, the farm is still family owned and operated. We are from a proudly traditional farming family spanning four generations. We were married in 1998 and put our hand up to take over the management of the business and the farm. The dairy industry was deregulated in 2000, causing the sector to destabilise. We saw this as an opportunity; we were young, enthusiastic and ready for the challenge. We talked for a long time about the possibility of processing and bottling our own milk. We were finding it hard to see a future in handing our milk over at the farm gate and taking no further responsibility for it. In these early days we had no control over the price or quality, as the focus was always on volume because payment for milk was by the litre. At the same time we found production costs began to skyrocket. After having my third child I had some time at home. I found myself researching on the internet about different options and possibilities for the farm and our business. We talked to the South West Dairy Consultative Committee, a federal group in Bunbury, who were very helpful. Based on this discussion and our research we applied for a government grant. We were successful in securing this seed capital grant to help us vertically integrate and move Bannister Downs Dairy into fresh milk manufacturing. Essentially helping us control our own destiny, the quality of our milk, and to look after our girls (moo) and our team.

How has your job changed?

The journey was long and the learning curve huge! At times, we questioned ourselves, were we doing the right thing? Like all new businesses, we had our doubts in the early days, but we also had support from our team, the industry and our community - we chose to be courageous. The people we brought on board, believed in us and that made us keep striving. On the tough days,



Profile: Milk Podcast Pack (continued)

we just kept thinking, we couldn't let our team down. They were there at two in the morning when things went wrong, they did whatever they could to make it happen, and that kept us moving forwards. Mat and I have worked every element of this farm. As we have steadily grown it was not uncommon to find Mat or I driving the truck to do the deliveries or to work late at night finishing off administration requirements or getting hands on milk processing. We still take this approach. Being hands on reminds us where we started. It drives us to ensure we continue to provide a premium quality product. At the heart of everything, this makes us proud to be Western Australian dairy farmers. It makes us proud to be involved in our industry and our community.

Do you name the dairy cows?

Bannister Downs Farm is home to more than 2,200 Holstein Friesian cows, specifically chosen to create premium quality milk. Our girls are family. It may sound strange, but just like any dog, cat, hamster, or rabbit can be part of your family - our cows, are part of ours. We know every cow, their heritage and family history. We know their personality, habits, likes and dislikes. It's a big responsibility to manage the individual needs of our girls, but we believe that is what makes our farm special. We care about our girls as individuals. We always do our best to make sure our girls are never thirsty, never hungry and never frightened. We do everything we can to manage those important things for them, every day. Our herd are hand reared and nurtured as calves to grow up into happy and calm dairy cows. It makes sense that when our cows are happy and healthy they can easily produce the best quality fresh milk. During the day our girls graze on lush pastures and rest amongst the shady karri and peppermint trees that surround Bannister Downs Farm. Sometimes we manage to find time to walk amongst them under the trees, it is irresistibly beautiful.

What happens to the milk once it leaves the cows?

Our dairy cows are milked each morning and afternoon and then their fresh milk starts the process of 'separation'. The separator is adjusted to make sure the cream content is exactly as required (min of 3.8% for Farm Fresh and 0.99% for All Lite). The cream is then homogenised to make sure that it remains evenly dispersed within the finished fresh milk. (Homogenisation is a physical process where cream is pushed through a tiny hole to make all of the cream particles a small and even size). In the final stage of processing the fresh milk is heat treated using a traditional batch pasteurisation method. The low temperature pasteurisation system we use, we believe, may be nutritionally beneficial; enzymes and proteins are all heat sensitive and can be denatured at higher temperatures. Bannister Downs milk is only heated to a maximum of 66 degrees, where it is then held via a controlled water jacket (in a large tank), prior to flowing through a cooling system to achieve 4 degrees as quickly as possible to prevent any bacterial growth. Bannister Downs Fresh Milk is now ready for packaging. It is piped from a chilled holding vat, into a filling room designed to meet superior hygiene levels, including a positive air pressure system, and a low ambient room temperature to prevent any opportunity for contamination or bacterial formation. Only processed milk is able to enter this room and it always leaves in a sealed pouch. Once packaged and sealed, the pouches of milk are placed in cartons and transferred to our chilled storage area, awaiting collection for distribution. Where possible we maintain control over the distribution of our milk to your retail outlet and can guarantee our milk has been maintained in an optimal cold chain system. Our vehicles leave our



Profile: Milk Podcast Pack (continued)

premises loaded with fresh milk to supply shops within 6–8 hours of collecting this milk from our girls.

What is your response to controversy around various animal handling practices in the dairy industry?

The discerning consumer is showing a growing hunger for information around what they are purchasing for their families. There is controversy around various animal handling practices such as calf rearing, use of antibiotics, growth hormones, appetite stimulants and ‘commercial’ cattle handling in such a way to cause stress or harm to the animals, to name a few. We are able to confirm that all of our farming practices are based on a very ethical and traditional model and that we are dairy farmers because we are passionate about raising healthy cows. Our calves all remain with their mothers for a minimum of 48 hours so they receive a good feed of colostrum for a healthy immune system, before their mums head off to be part of the dairy herd. We then hand rear all of our calves. We have automatic calf feeding stations with daily volume limits so they don’t over drink and then make themselves sick. They can come and drink small amounts as frequently as they like and their milk is warmed up for them too. We only use fresh cow’s milk to feed our babies via these stations from the cows of the morning milking (instead of re-constituted milk powder). Our girl and boy calves are all given the same care. We generally rear our bobby (male) calves until a minimum of three months of age, at which time we either hold onto them or we on-sell them to another farmer rearing steers if space is a little short.

Why is it important that consumers are educated about where foods come from and how they are produced?

So sometimes our produce doesn’t behave how people might expect it to. If you buy our cream it may have a skin on it that will thicken over time and that’s because it is cream fresh from a cow and that’s how real cream behaves. All of our products are free of any additives, including skim milk powder and permeate. We believe that there’s now a more educated consumer seeking, real natural produce. That means sacrificing some consistency, but instead we can deliver real produce that behaves as nature intended.

“Sometimes our produce doesn’t behave how people might expect it to. If you buy our cream it may have a skin on it that will thicken over time and that’s because it is cream fresh from a cow and that’s how real cream behaves.”

What did it feel like when you produced your first litre of milk?

We have been part of this community for more than four generations but our most proud moment for our farm was on 8 August 2005. That was when we put our first litre of milk on the shelf of our local store. It was an incredibly rewarding milestone. At that moment, it wasn’t just us celebrating, our community celebrated with us. We had everyone behind us, willing us to succeed and share the achievement. We love where we live and work. It is part of who we are and of Bannister Downs Dairy – real milk, nothing added. It is what it is, much like our



Profile: Milk Podcast Pack (continued)

community. Our connection to our land is difficult to describe. When we are away from the farm we feel the urge to get back. When we return, driving up through our rolling hills and see our girls (moo) we all find ourselves sighing. It is connection, it is home. We also believe our community stretches to Perth and beyond, wherever our customers are located. Without our milk fans, we would be nothing. We never forget where we started as a small business with a lot of heart and a big dream. Our community have helped us get there.

Dairy deregulation

What does deregulation mean?

Deregulation is the reduction or elimination of government power in a particular industry, usually enacted to create more competition within the industry.

‘Before dairy deregulation on 1 July 2000, milk that was channelled into the drinking milk sector in each State, but not the Northern Territory and Australian Capital Territory, was bought from dairy farmers at prices prescribed by State Governments. These prices were adjusted periodically and averaged around 47 cents per litre across Australia for the year to 30 June 2000 after adjustments for freight and contributions towards the administration of state milk arrangements. Across Australia, less than 18 per cent of milk is directed to drinking products with the remainder used to produce cheese, butter, milk powders and other manufactured dairy goods. However, in New South Wales, Queensland and Western Australia, more than 40 per cent of state milk production has historically been used as market milk thereby attracting higher regulated prices. Under regulated farmgate price controls, legislative provisions in each State eliminated arbitrage opportunities from cross-border flows of milk and enabled market milk premiums to be allocated to dairy farmers on a state basis. In contrast, payments for milk used in manufactured dairy products are determined by the international market and averaged around 21 cents per litre in 1999–2000.

‘Before July 2000 farmer prices for market milk were protected. After July 2000 the bargaining position of dairy farmers became subject to a set of new circumstances although not all their bargaining power was lost with deregulation. Ultimately, as consumers are prepared to pay a premium for fresh milk, processors will have to pay farmers a sufficient return to guarantee a reliable supply if dairy farmers are not to exit into other areas of agricultural production.’

- Australian Competition and Consumer Commission: Impact of farmgate deregulation on the Australian milk industry: study of prices, costs and profits: <https://www.accc.gov.au/system/files/Impact%20of%20farmgate%20deregulation%20on%20the%20Australian%20milk%20industry.pdf>



Profile: Milk Podcast Pack (continued)

If you want to learn more about MILK, try these lessons that are perfect for school or remote learning:

- Geography (Year 7)

Lesson 5: Liveability. Students explore the factors affecting the liveability of places, including the dairy farm.

- English (Year 8)

Lesson 5: Milking it for Effect. Exploring comedy in multimedia productions. Useful for their own podcasts.

Worksheets



Head over to our Homework section in the *From Paddock to Plate Resources Library* and use the online fillable worksheets as an ideal homework activity to complement this resource.