Careers in agriculture

Design thinking in agriculture

Technologies

- ACTDEP049
- ACTDEP051

Agriculture is everywhere
Lesson Overview

Students will explore the place of design thinking and economics in agriculture through investigation of a successful Western Australian agricultural business and engage in activities that allow them to explore aspects of the design process including economic considerations.

Australian Curriculum:
Design and Technologies - Year 9 and 10
Apply design thinking, creativity, innovation and enterprise skills to develop, modify and communicate design ideas of increasing sophistication (ACTDEP049)
Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability (ACTDEP051)

Resources
- Ripe article
- Career cards
- A map of Western Australia
- buywesteatbest.org.au/

Tuning in
Students will read the article “Let the creative juices flow bro’ by Caitlin Burling, Ripe Magazine, May 2015, vol 9, number 5, page 3. It profiles a pair of young agricultural entrepreneurs who are making cold-pressed juices from WA fruit.
Whole class introduction

Design thinking is a process that businesses use to identify innovations, invent and improve existing products.

Some businesses start with an existing product and use the process to make it more easy to use, stylish or interesting, and this is sometimes called value-adding. Products achieve a higher price if they are different and unique, or value-added.

Did you know that some of the most creative cities in the world have design strategies, including London and Melbourne? These strategies are used to make these cities places where people want to visit, to see new and exciting inventions, fashions and products and to experience new tastes.

Even the food we eat is designed. Agriculture has many careers for people who are creative and interested in design.

Throughout Western Australia there are businesses that promote themselves as destinations where you can try innovative, value-added farm products. Some businesses and communities band together to promote their region as a place to visit where these food experiences can be found.

You may recognize the following locations as places where you have sampled value-added products.

- Swan Valley
- Manjimup
- Margaret River
- Kununurra
- Carnarvon

See if you can match these value-added products with a region or town where they are grown in Western Australia. Choose from the list of towns above:

<table>
<thead>
<tr>
<th>Product</th>
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<tbody>
<tr>
<td>Black truffle dukkha</td>
<td></td>
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<tr>
<td>Choc-coated frozen banana</td>
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<td>Venison chorizo sausage</td>
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<td>Chia with coconut juice/ ready-made breakfast</td>
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(See answers overleaf)

Teacher note: A handout is provided with a map of Western Australian towns.
Agriculture is everywhere
Agriculture is everywhere
Background reading

Agriculture is an industry that involves a lot of design thinking. If you own a small business, there are many ways to design and invent new ways of doing your work. Small businesses will often go through a design process to think of ways to make more money.

Design thinking is described as a range of strategies for -

- understanding design problems and opportunities
- visualising and generating creative and innovative ideas
- analysing and evaluating those ideas that best meet the criteria for success and planning.

What are the steps of design thinking?

**Define**: What is your product idea? What research can you do, so you know the most about it before you get started? If it was successful, what would happen?

**Watch and observe**: How do people use that product? How often do you see it? When do people buy it and why? Can you see things that the products doesn’t do, or limitations it has that could be improved?

**Brainstorm**: Come up with a wide range of ideas. Consider all options and don’t rule anything out. Be creative. Visualise as many possibilities as you can.

**Prototype**: Narrow down your options. Try to make your product a few different ways and see what is involved in making it each way.

**Test and evaluate**: Try out the different prototypes, so you can see how well they work. Do the tests more than once. Look at what aspects of the product could be changed or improved.

**Plan**: Choose your preferred option. You now have your design and will need to develop a business plan, purchase equipment and contract the services you need to start making your new product.

An example of a value-added agricultural product is Michaels Brothers cold pressed juices. Michaels Brothers do not make plain fruit juices in plastic cartons, like we commonly see in the supermarket. They have a value-added and creative range of products, using Western Australian fruit. It was not an easy process coming up with their business idea.

Read the article on the Michaels Brothers and look at the juice products on their website. Describe the design thinking steps the Michaels Brothers went through to come up with their range of bottled juices and consider how their products are different from other juices in the supermarket.
Exercise 1: Read the article on the Michaels Brothers and look at the juice products on their website.

The Michael Brothers have developed a product that appeals to shoppers who want something more than plain juice in plastic cartons. They have tried to differentiate themselves by using local produce and producing their product in the traditional way.

Describe the design thinking steps the Michaels Brothers went through to come up with their range of bottled juices and consider how their products are different from other juices in the supermarket?

Teacher Note: A handout has been provided for this exercise

Exercise 2 - Value-added products often have a higher price at the checkout.

What are the potential extra costs this business may incur in order to value-add and what would the rewards of value-adding be in both monetary and non-monetary terms to the Michaels Brothers?

Exercise 3 - Imagine you are a dairy farmer with an on-farm processing facility which enables you to make your own dairy products. You have been getting a low price for your butter and you want to find ways to value-add.

Prepare a brainstorm on ways you can make butter more exciting and value-added. For example new flavours, packaging and ways of preparing butter recipes.

Reflection

Explore careers in agriculture

Agriculture has many career opportunities for people who are creative and have talent in design. Putting these innovations into the market place requires input from a range of other career people also. List all the jobs that would be created for people if your butter innovation was to be made commercial.
Sources

‘Let the creative juices flow bro’ by Caitlin Burling, Ripe Magazine, May 2015, vol 9, number 5, page 3. This is a publication of Farm Weekly and has been used with permission.

Definition of design thinking:
australiangcurriculum.edu.au/Glossary/Index?a=T&t=Design+thinking
(Australian Curriculum, accessed 20 August 2015)

There are many sources on the importance of value-adding in advanced economies. You may wish to look at:

- Department of Agriculture and Food’s ‘Buy West Eat Best’ program. The website profiles many value-added Western Australian agricultural businesses. Website: buywesteatbest.org.au/ (Accessed 26 June 2015)
- The Manjimup Southern Forests Food Council, a group that aims to promote innovative agricultural produce from this Western Australian region. Website: southernforestsfood.com/ (Accessed 26 June 2015)

Note: Answers to Value Adding and the Regions

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Case study

Let the creative juices flow bro

By Caitlyn Burling, Ripe Magazine,

Who knew so much goodness could be squeezed into one happy humble bottle?

The first sip of a Michael Brothers cold-pressed juice makes one’s eyes light up in instant recognition of something special.

A simple as it might sound, there is only freshly-pressed juice to be found within the classic-style glass bottle of a Michael Brothers beverage – there’s no added water, flavouring or preservatives anywhere to be found.

With a purposeful focus on local, all of the fresh fruit poured into a Michael Brothers’ juice is sourced directly from WA growers in the areas that surround brothers Dustin and Martin’s family farm at Bolgart near Toodyay.

All of that, combined with a healthy dose of country swagger of two young farm lads, is what has helped Michael Brothers cold-pressed juices pop in supermarkets, cafes and restaurants all over Perth.

‘Growing up on the land, we know there’s no comparison to real food taken straight from nature,’ Dustin said. ‘It’s always been obvious to us that fresh and local is best.’
‘Not only are there great health benefits from cold-pressed juice, but we are also supporting local producers who are growing the freshest fruit you can imagine.’

‘As soon as you pasteurise your juice and start adding preservatives you lose all that nutrition and rich, natural taste.’

Dustin initially started his working career as an accountant, following the footsteps of his father, but after one of his mates complimented him on one of his juice creations, he began to think that there was a business opportunity in juicing.

He quit his job and moved back to the farm in 2012 and started making and selling fresh orange juice in the Toodyay area.

By 2013 his younger brother Martin came on board and the pair set up their cold-pressing premises in Caversham, which is where they started experimenting with other juice combinations and taking samples around to Perth businesses.

They initially started out as the modestly names ‘Worlds’s Healthiest Juice Company’ and at the end of last year decided to go back to basics and took on the easily recognized Michael Brothers.

Their range of Fresh juices has grown exponentially to include 10 different combinations, including simple crowd favorites such as orange juice, cloudy apple and mango punch then some modern, complex ones such as the living green juice, C.A.B.A.L.A and ginger tonic.

A lot of the taste testing was carried out to find the right balance of flavours particularly for the C.A.B.A.L.A which took two years to perfect.

‘We just want to make every juice as tasty as possible,” Martin said.

“It takes a fair bit of taste testing to get the combinations just right.”

“And some of our juices were developed as a direct result of what our clients were asking for.”

We had so many requests for a green smoothie type of juice that we developed the living green juice, which we had never considered and it is our second biggest seller.”

While the brothers are keeping up with the growing demand for their sweet nectar, they said one of their biggest challenges was balancing the seasonality of different fruits and the cost of sourcing the highest quality, locally grown produce in WA.

“Because we don’t add any water or concentrate to our juices, we have high costs,” Dustin said.

“We pay for our fruit by the tonne and only a third of that becomes juice.”

“So our customers need to realise they have to pay for top quality.”
“But that’s also our strongest point and sets us apart, because we only use fresh, WA produce that’s packed with nutrients and you can’t get any better than that”.

Want to know more?

- Michael Brothers
- Dustin and Martin Michael
- +61 (0)8 9378 7007
- michaelbrothers.com.au