

Breeding a sustainable future

Learning Experience 2

1. You will be researching the technological developments within an industry to present to the class.
2. Review background information with teacher
<http://www.sciencealert.com/here-s-what-fruits-and-vegetables-looked-like-before-we-domesticated-them>
3. Get in to pairs
4. Select from the following industries to conduct your research into the technological changes within the industry
 - a. Fisheries
 - b. Cotton
 - c. Wheat
 - d. Meat production (Beef, pork, chicken other)
 - e. Dairy
5. You will be reviewing technological developments in one of the industries above. You will need to choose from the following technological angles
 - a. Biotechnologies (gene technologies) used to improve yields, or
 - b. general technologies that have been applied to improve yields
6. You will need to describe the changes over a period of time, within the industry you have chosen. For each industry and investigation the detailed time will be different (for example if you choose cotton breeding developments have occurred over a different time period compared to pork breeding).
7. Here are some questions for you to think about:
 - a. What is the history of the industry in Australia?
 - b. What period of time are you investigating?
 - c. Identify and list different technology that has been used to support improved yields
 - d. How has technology changed?
 - e. What fields of science are involved with technological developments
8. It will be up to your group as to how you wish to present your work. Your teacher may already have an idea for the class, so you will need to confirm the presentation style. Here is a list of presentation suggestions:
 - 2min presentation
 - Poster
 - Concept map
 - Table
 - Bullet points/summary

Guide to different industries

1. Resources on fisheries

<http://frdc.com.au/research/genetics/Pages/default.aspx>

<http://frdc.com.au/knowledge/publications/fish/Documents/FISH%2021-1%20Genetic%20technology%20in%20the%20management%20of%20wild%20fisheries.pdf>

<http://frdc.com.au/knowledge/publications/fish/Documents/20-2%20New%20technology%20speeds%20gene%20research.pdf>

<http://frdc.com.au/stories/Pages/24-Male-dominance.aspx>

<http://www.csiro.au/en/Research/AF/Areas/Aquaculture/Premium-breeds/Black-tiger-prawn> <http://frdc.com.au/research/Documents/Genetics-Fisheries-Field-Guide.pdf>

<http://www.afma.gov.au/>

<http://www.fao.org/fishery/topic/2800/en>

<http://www.fao.org/fishery/factsheets/en>

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2. Resources on cotton

This is a timeline showing the development of cotton in Australia and game changing innovations in that period

http://cottonaustralia.com.au/uploads/resources/CEK_Chap_3_The_History_of_Cotton.pdf#page=4 <http://cottonaustralia.com.au/cotton-library/fact-sheets/cotton-fact-file-biotechnology>
http://www.abca.com.au/wp-content/uploads/2012/09/ABCA_Resource_Guide_3_v2.pdf
<http://archive.industry.gov.au/Biotechnologyonline.gov.au/topitems/resources.html>
<http://archive.industry.gov.au/Biotechnologyonline.gov.au/foodag/cotton.html>
http://cottonaustralia.com.au/uploads/resources/CEK_Chap_2_A_Sustainable_Cotton_Industry.pdf http://www.abca.com.au/wp-content/uploads/2012/09/ABCA_Resource_Guide_3_v2.pdf
<https://vimeo.com/102796184>
<http://mv.picse.net/pesticides/cotton>

Resource guide that may help with cotton and canola (<http://www.abca.com.au/materials/resource-guides/>)

3. Wheat

<http://www.grdc.com.au/Resources/Factsheets/2011/02/Wheat-Breeding>
<http://www.learning.schools.nsw.edu.au/plants/plant-breeding1/wheat-breeding/>

4. Meat and Livestock Australia

<http://www.target100.com.au/Hungry-for-Info>
<http://www.target100.com.au/100-Initiatives/Current-Initiatives/Using-genetic-technologies-to-reduce-methane-emissions-from-Australian-beef-cattle>

Pork:

http://australianpork.com.au/wp-content/uploads/2013/09/1113329_AustralianPork_Final-Cover_1-2_AustralianPork_Inner_1-2_Page-PDF-LoRes.pdf
<http://australianpork.com.au/library-resources/publications/fact-sheets/>
<http://www.aussiepigfarmers.com.au/>

5. Dairy (general)

Look at its history - milking by hand, milking in a dairy with suction caps, Robotic and platform milking dairies - <https://www.youtube.com/watch?v=w7ugXLd78JU>

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