

CONTENTS



**GET IT RIGHT!
NOT SHE'LL
BE RIGHT!**

Social studies
activities to support
the use of SOPI
in schools

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CONNECTIONS TO THE NEW ZEALAND CURRICULUM

CURRICULUM PRINCIPLES

The learning activities in this resource have been developed to support these curriculum principles of The New Zealand Curriculum.

Learning to learn: Encourages students to reflect on their own learning processes and learn how to learn.

Community engagement: Enables students to connect to wider aspects of their lives, their families, whānau, and communities.

Coherence: Provides identified links across the learning areas of science, technology, social studies, and mathematics and statistics to support students to make connections within and across learning areas.

Future focus: Encourages students to look to the future by exploring such significant future-focused issues as sustainability, enterprise, and globalisation.



ACHIEVEMENT OBJECTIVES

The learning activities in this resource support these social studies achievement objectives of The New Zealand Curriculum:

Level 4

Students will gain knowledge, skills and experience to:

- understand how exploration and innovation create opportunities and challenges for people, places and environments
- understand that events have causes and effects
- understand how producers and consumers exercise their rights and meet their responsibilities.

Level 5

Students will gain knowledge, skills and experience to:

- understand how economic decisions impact on people, communities, and nations
- understand how people's management of resources impacts on environmental and social sustainability
- understand how people seek and have sought economic growth through business, enterprise, and innovation.

KEY COMPETENCIES

These learning activities provide opportunities for:

Thinking

- use creative, critical, and metacognitive processes to make sense of information and ideas
- develop understanding, make decisions, shape actions, and construct knowledge.
- develop intellectual curiosity
- actively seek, use, and create knowledge
- ask questions, and challenge the basis of assumptions and perceptions.

Using language, symbols, and texts

- produce texts of various kinds
- interpret and use language and technologies in a range of contexts
- use information communication technologies to access and provide information and to communicate with others.

Managing self

- be enterprising and resourceful
- make plans, manage projects, and set high standards.

Relating to others

- listen actively, recognise different points of view, and share ideas.
- cooperate and work effectively together
- come up with new approaches, ideas, and ways of thinking
- Participating and contributing
- be actively involved in communities
- contribute appropriately as a group member, and make connections with others
- contribute to the quality and sustainability of social, cultural, physical, and economic environments.

Key understandings

- Innovative business and enterprise can lead to economic growth.
- Primary producers' innovative use of technologies and systems increases production, which provides both opportunities and challenges.
- Changes made in the way products are produced have flow-on effects, both positive and negative.
- Primary producers respond to the needs and wants of consumers, both to increase their market share and to fulfil their responsibilities to protect consumer safety.
- Decisions taken for economic reasons can have both positive and negative effects on people.
- Innovation in primary production creates both opportunities and challenges for people, places and environments.
- Primary producers use smart tools and strategies to manage resources effectively to maximise production and minimise harmful environmental effects.



TEACHING AND LEARNING PLAN

These activities have been developed to be undertaken collectively, although they could be done individually.

INTRODUCTION

The Government is supporting primary producers to develop new and innovative products and enable more profitable and sustainable practices in our primary industries through the smart use of technology. The Ministry for Primary Industries (MPI) is partnering with the primary industries in joint ventures, called Primary Growth Partnership (PGP) programmes, to invest in innovation throughout the value chain. Whether it is research into ideal growing conditions, boosting profitability and productivity on farms or improving the genetic makeup of animals (including seafood) through selective breeding, precise measurement is essential, and technology is very good at providing that precision.

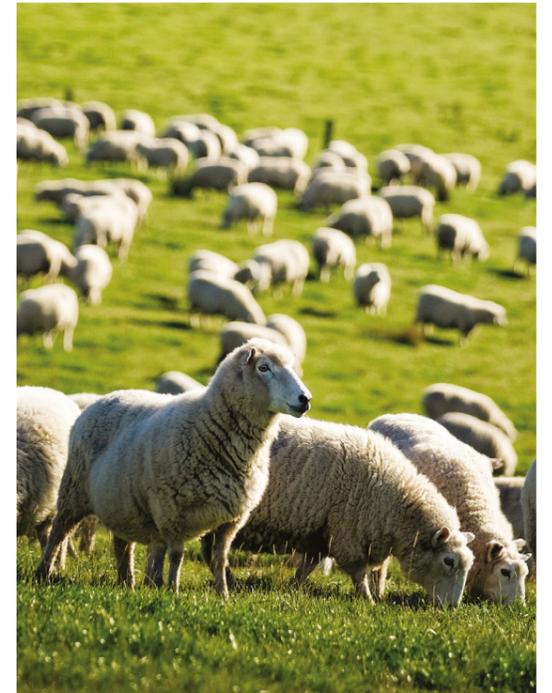


ACTIVITY 1:

USING TECHNOLOGY TO GET PRODUCTS RIGHT

1. The [Situation and Outlook for Primary Industries \(SOPI\) 2016](#) document introduces Primary Growth Partnerships (PGP) programmes on page 18. Students can read this section and find answers to these questions:

- How many PGP programmes have there been?
- How much money has been invested in PGP programmes?
- How much is their potential annual benefit to NZ (in \$NZ)?
- Why does the government co-invest these projects?

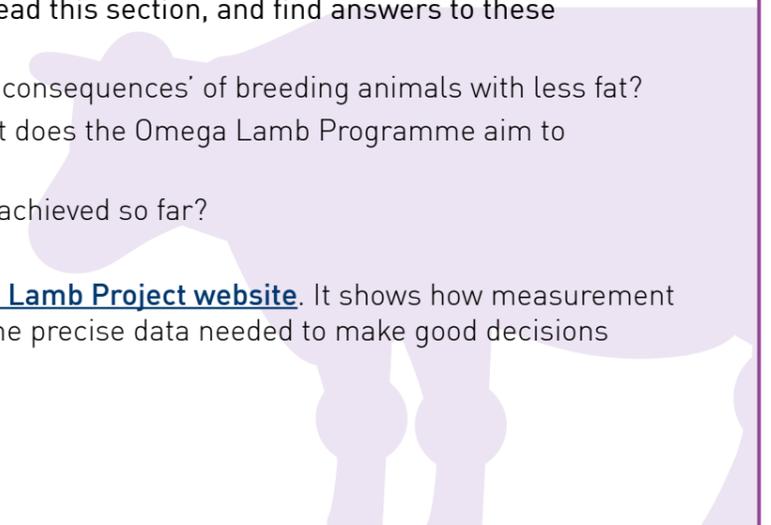


2. The [Omega Lamb Project page on the MPI website](#) states that 'Over the past 20 years, the sheep industry has focused on increasing lamb productivity and yield, selecting animals for lower fat levels. However, reducing fat has had unintended consequences'.

Students can follow the link, read this section, and find answers to these questions:

- What were two 'unintended consequences' of breeding animals with less fat?
- What qualities of lamb meat does the Omega Lamb Programme aim to improve?
- What successes have been achieved so far?

3. Watch the video on the [Omega Lamb Project website](#). It shows how measurement technology is used to gather the precise data needed to make good decisions about lamb production.

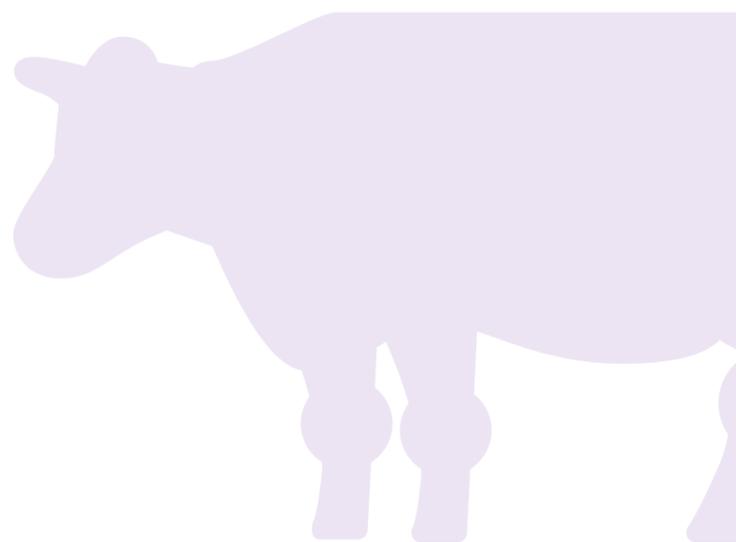


Ask students to:

- Identify as many examples of measurement technology as they can
 - Explain how the Omega Lamb Project creates opportunities and challenges for people, places and environments.
4. Go to the [Primary Growth Partnership programmes web pages](#), scroll down and explore some of the other programmes. Students can select one, read about it, and write a brief account of the following:
- How the programme aims to bring economic growth through business and enterprise
 - How innovative technology is being used to achieve the aim
 - The opportunities and challenges for people, places, and environments found to date.

EXPLORE KEY TERMS

Primary production, joint ventures, investment, business, enterprise, innovation, value chain, selective breeding, precision, data.



ACTIVITY 2:

GETTING IT RIGHT FOR CONSUMERS



This activity looks at consumer and market demand. What consumers like and want to spend their money on changes over time. As the SOPI document explains on page 25:

'Primary industries use analytics to help them understand what products consumers want and why they want them, what prices they will pay, how many each will buy in a lifetime, and what triggers will make people buy more'.

Consumers have the right to know that the products they buy are safe. Primary producers and government agencies like the Ministry for Primary Industries (MPI) go to a lot of trouble to ensure that food products are produced in certain conditions and in such a way that their safety can be assured, or officially certified. Organisations like Environmental Science and Research (ESR) carry out thorough testing of food products to check for anything that could be harmful for consumers.

Many consumers are also concerned that food products are produced in ethical and environmentally sustainable ways. The internet means that consumers now have greater access to information about how food is made, and the impact of food production on the environment or animal wellbeing. As a result we are now, more than ever making ethical choices about the food we purchase.

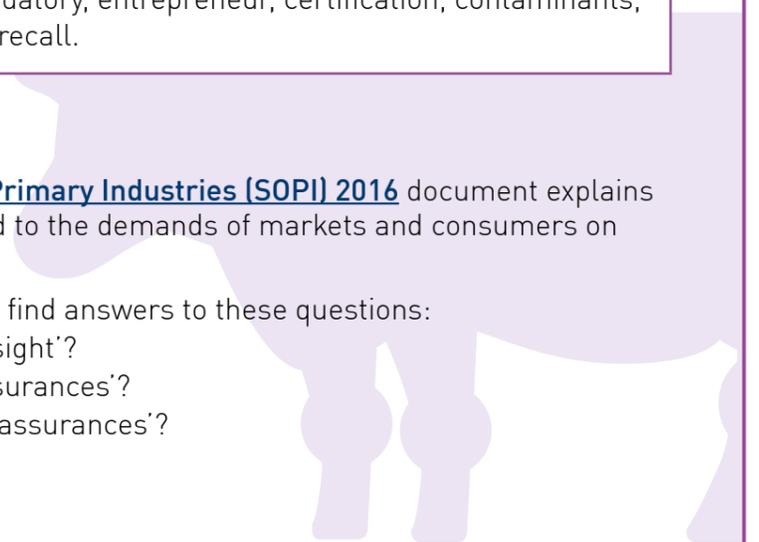
EXPLORE KEY TERMS

Market, consumer, demand, mandatory, entrepreneur, certification, contaminants, traceability, ingredients, product recall.

1. The [Situation and Outlook for Primary Industries \(SOPI\) 2016](#) document explains how primary producers respond to the demands of markets and consumers on pages 24–25.

Students can read page 24, and find answers to these questions:

- What is meant by 'market insight'?
- What is meant by 'official assurances'?
- What is meant by 'customer assurances'?



Students can read page 25, and find answers to these questions:

- What are consumer analytics?
- What do analytics help primary producers understand?

Discuss with students how they think primary producers find out this type of information from consumers, and how it can be used to:

- Support decision making and to build businesses and enterprises
- Meet their responsibilities to consumers.

- Have students view this [video about Shay Wright](#), Co-Founder of Te Whare Hukahuka, and a Primary Industry Champion, and find answers to these questions:
 - What does 'adding value' mean?
 - What are 'premium markets'?
 - According to Shay, what do consumers in a premium market care about in the food they buy?

- Have students read the [Traceability page on the Food Standards, Australia and New Zealand](#) website to find answers to the following questions:
 - What is meant by traceability?
 - Why is it important?
 - What things could you find on a product label related to traceability.

Students can then have a look at five products that can be bought from their local supermarket to see if the products, and/or their ingredients are traceable. They can then discuss why some are traceable and others are not.

- Have students view this [video about Ellen Ashmore](#), a scientist from the Institute of Environmental Science and Research (ESR), and a Primary Industry Champion, to find answers to the following questions:
 - What is Ellen's area of expertise?
 - What are two types of harmful contaminants she looks for in the food she tests?
 - What is the purpose of certification?

For each of the contaminants Ellen mentions find out:

- How they can get into food
- The effects they can have on the people who consume the food.



ACTIVITY 3:

GETTING IT RIGHT FOR THE ENVIRONMENT



This activity focuses on the environment. Growth in the dairying industry has been great for the New Zealand economy, but has created challenges for our management of the environment. A major issue for dairy farmers is how to maximise production while minimising the amount of nutrients, such as nitrogen and phosphorus, that run-off the land and enter waterways.



For many years dairying was restricted to areas of New Zealand that had high rainfall that enabled grass to grow all year round.

Irrigation technologies have led to the development of dairying in areas that were previously too dry, such as the Canterbury Plains and the South Island High Country. Arable farming on the Canterbury Plains also relies on the efficient use of irrigation. Irrigation brings its own environmental and sustainability challenges.

The dairy industry has committed to tackling environmental issues and farming within environmental limits. The [Sustainable Dairying: Water Accord](#) was launched in July 2013 setting out the dairy industry's commitment to improving water quality in New Zealand. The Water Accord includes commitments to targeted riparian planting plans, effluent management, comprehensive standards for new dairy farms and measures to improve the efficiency of water and nutrient use on farms.

EXPLORE KEY TERMS

Revenue, irrigation, environmental impact, effluent, run-off, riparian zone, sustainable, intensive farming, arable farming, precision, efficiency, inputs, carbon footprint.





1. The [Situation and Outlook for Primary Industries \(SOPI\) 2016](#) document describes how important dairying is to the New Zealand economy, and how quickly it is growing. Ask students to read pages 28 and 29 to find answers to these questions.
 - What changes have been taking place in New Zealand's dairy exports?
 - What factors have caused these changes?
2. Have students view this video about [Using innovation to minimise impact](#), featuring Waikato dairy farmer, Eric Muckle, and find answers to this question.
 - How has Eric's management of resources made his farm more environmentally sustainable?
3. Have students view this video about [Nutrient and effluent management](#), featuring Hawkes Bay dairy farmers, Nick and Nicky Dawson, to find answers to these questions.
 - What are the Dawson's doing on their farm to maximise production?
 - How has the Dawson's management of resources made their farm more environmentally sustainable?
4. Ask students to watch this [video about Craig Mackenzie](#), a Primary Industry Champion who practices precision arable farming on the Canterbury Plains.
At the end of the video Craig says that 'environmental and financial sustainability go hand-in-hand'. How does he use technology on his farm to make sure it is both environmentally and financially sustainable?

Resources

For more activities about water and the primary industries, see Wai – Wai Not! Science activities to support the use of SOPI in schools.

ACTIVITY 4:

EXPLORE FURTHER



It is recommended that you take a social inquiry approach to investigate issues related to these activities. The [Social inquiry](#) section of [Social Studies Online](#) explains:

'Through social inquiry, students ask questions, gather information, and examine the background to important societal ideas and events. They are able to explore and analyse values and perspectives relating to these ideas and events; and develop understandings about issues and the ways that people make decisions and participate in social action.'

Activities 1–3 provide a platform for this further inquiry. An explanation of the guiding questions below can be found in the [Approaches to Social Inquiry](#) booklet. We also recommend the use of the [Social Inquiry Planning Tool](#).

1. WHAT IS OUR FOCUS?

Focus on Developing technology to get products right (refer to Activity 1)

Some possible topics:

- Funding science and technology research and development in New Zealand – who are the main funders? What criteria do you think should be used to determine if an industry/business/collective should receive priority for government science and technology investment funding, and why?
- Genetic modification of animals and/or plants. What are the issues? What information is available to producers and consumers to make informed decisions?



Resources

- [Callaghan Innovation](#)
- [Science and Innovation \(MBIE\)](#)
- [Primary Growth Partnerships \(MPI\)](#)
- [Māori in the primary industries \(MPI\)](#)
- [Federated Farmers stance on genetic modification](#)
- [GE-Free NZ](#)
- [Genetic Engineering and Sustainable Agriculture – Greenpeace NZ](#)

Focus on Getting it right for consumers (refer to Activity 2)

Some possible topics:

- What responsibilities do primary producers have to the consumer?
- Is it possible to trace all products and ingredients in the supply chain?
- Are we doing enough to uphold consumers' rights?
- Do consumers have the right to expect that all products and ingredients are traceable? If so, what opportunities and challenges might this present for producers?
- What happens when things go wrong?
- What voice do consumers have?
- Issues related to specific primary products for example, pasteurised versus raw milk, or caged versus free-range chicken and egg farms.

Students could investigate incidents of food contamination, their causes, and their effects on the development of regulations in New Zealand. These are examples of real incidents.

- 2004 – New Zealand soy milk manufactured with added kelp contained toxic levels of iodine.
- 2004 – New Zealand cornflour and cornflour-containing products were contaminated with lead.
- 2008 – Infant formula in China contaminated with melamine, and its effect on New Zealand.

Resources

- [Food Safety \(MPI\)](#)
- [Risk Management Programmes \(MPI\)](#)
- [World Health Organisation \(WHO\); Infant formula contamination 2008](#)
- [Raw milk \(MPI\)](#)
- [Poultry meat \(MPI\)](#)
- [SAFE \(Save Animals From Exploitation\)](#)
- [NAWAC](#)



Focus on Getting it right for the environment (refer to Activity 3)

Some possible topics:

To what extent are primary producers responsible for local water quality issues, and how are they contributing to solutions? Explore local examples such as the Selwyn River (Canterbury) or Lake Tutira (Hawkes Bay).

Resources

- [Environment / Dairy NZ](#)
- [Effluent management - Waikato Regional Council](#)
- [Irrigation NZ](#)
- [Irrigation Schemes - Greenpeace NZ](#)

2. WHAT DO WE NEED TO FIND OUT?

To carry out an effective social inquiry students need to:

- Understand key terms (see key terms in Activities 1–3)
- Explore the facts about real events and situations related to the topic
- Explore the range of people's different values and perspectives.

3. WHAT DIFFERING VALUES AND PERSPECTIVES DO PEOPLE HAVE?

It is important to explore the differing values and perspectives that exist within and between groups, including those of:

- Primary producers
- Iwi
- Environmentalists
- Overseas markets
- Politicians
- Consumers
- General public.

One way to explore the values, perspectives and opinions people have about these issues is to ask them. Students can interview or survey people who represent a range of perspectives.



4. WHAT DECISIONS AND RESPONSES DO PEOPLE MAKE?

To carry out an effective social inquiry students need to explore people's decisions and actions in response to incidents, challenges, issues and problems, as well as the consequences of those actions and decisions. Students need to consider how disagreements and conflicts can be resolved.

Possible decisions and actions include:

- Using their resources, position and/or influence to bring about change
- Lobbying authorities to bring about change.



5. HOW EFFECTIVE IS OUR INQUIRY? (REFLECTING AND EVALUATING)

Students should reflect and evaluate throughout the social inquiry process. Reflecting and evaluating should focus on the:

- Knowledge and understandings developed through the social inquiry process
- Sources used (for example, their reliability and accuracy, fact versus opinion)
- Actual learning process itself
- Depth of critical thinking about the understandings gained.

Reflection and evaluation may change the initial questions, the direction of the inquiry, and the sources of information used.

6. SO WHAT?

This part of the social inquiry process challenges students to deepen their understanding, and do some 'big picture' thinking. It challenges students to explore how the details of the situations and events they have studied relate to:

- The conceptual understandings listed in the achievement objectives
- The students' own lives and long-term well-being
- Sustainability and the future well-being of the environment
- The effects for people locally and globally, now and in the future.

7. NOW WHAT?

Some possible actions that can be taken by students include:

- Communicating the findings of an inquiry – using appropriate media, for example, oral presentations, written reports, blog posts, audio visual presentations
- Deciding to change their personal behaviour, and encouraging others to do the same.