



# People and Place in the Kiwi World:

Social studies activities to support the use of SOPI in schools

Ministry for Primary Industries  
Manatū Ahu Matua



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# CONNECTIONS TO THE NEW ZEALAND CURRICULUM

## CURRICULUM PRINCIPLES

The principles set out below embody beliefs about what is important and desirable in the school curriculum – nationally and locally. They should underpin all school decision making.

These principles put students at the centre of teaching and learning, asserting that they should experience a curriculum that engages and challenges them, is forward-looking and inclusive, and affirms New Zealand's unique identity.

The New Zealand Curriculum (2007) p. 9

The principles that relate to this resource are:

**Community engagement:** The curriculum has meaning for students, connects with their wider lives, and engages the support of their families, whānau, and communities.

**Coherence:** The curriculum offers all students a broad education that makes links within and across learning areas, provides for coherent transitions, and opens up pathways to further learning.

**Future focus:** The curriculum encourages students to look to the future by exploring such significant future-focused issues as sustainability, citizenship, enterprise, and globalisation.

## KEY COMPETENCIES

The New Zealand Curriculum identifies five key competencies:

- thinking
- using language, symbols, and texts
- managing self
- relating to others
- participating and contributing.

People use the key competencies to live, learn, work, and contribute as active members of their communities. More complex than skills, the competencies draw also on knowledge, attitudes, and values in ways that lead to action. They are not separate or stand-alone. They are the key to learning in every learning area.

The New Zealand Curriculum (2007) p. 12

The following key competencies are relevant to this resource:

**Participating and contributing:** contributing to class discussion; participating in group tasks, particularly those based on contributing ideas about societal issues related to the environmental and social sustainability of the kiwifruit industry.

**Thinking:** exploring new ideas; making connections with prior knowledge; thinking critically; being able to analyse values and perspectives as they relate to societal issues.

**Using language, symbols, and texts:** recognising vocabulary specific to the kiwifruit industry; interpreting symbols relating to exporting and other aspects of the kiwifruit industry; reading and understanding texts related to this context.

**Relating to others:** working constructively as part of a group to explore responses to decision making about issues related to the kiwifruit industry.

**Managing self:** being able to work independently on a task; listening to, and following instructions carefully; showing initiative.

## ACHIEVEMENT OBJECTIVES

**Level 4:** Understand how exploration and innovation create opportunities and challenges for people, places, and environments.

**Level 5:** Understand how people's management of resources impacts on environmental and social sustainability.

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## KEY UNDERSTANDINGS

- Broaden students' understanding of the importance of primary industry exports to the New Zealand economy.
  - Understand how the kiwifruit supply chain impacts on a region – environmentally, socially, and economically.
  - Develop awareness of the opportunities for employment in the horticultural industry in New Zealand.
  - Develop awareness of the innovation within the New Zealand kiwifruit and the wider horticulture industry.
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# BACKGROUND NOTES FOR TEACHERS

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## SUSTAINABILITY AND THE NEW ZEALAND KIWIFRUIT INDUSTRY

Kiwifruit is New Zealand's fastest-growing primary sector export. The New Zealand kiwifruit industry contributes the highest export earnings per hectare for primary industries in New Zealand, so it is important to the national economy.

In New Zealand the industry operates under the Zespri trade name, which provides a single point of entry for the marketing of kiwifruit exports outside of Australasia. Zespri is owned by New Zealand growers and is one of the top five most recognised fruit brands globally – seen to represent quality, great taste, sustainability, and food safety. Zespri sells kiwifruit in 53 countries worldwide and has growers throughout the world, allowing a twelve-month supply to the market. New Zealand growers number just over 2400. In Italy there are over 150 growers, in Japan 800, in Korea 130, and there are approximately 50 in France, Chile, and the United States.

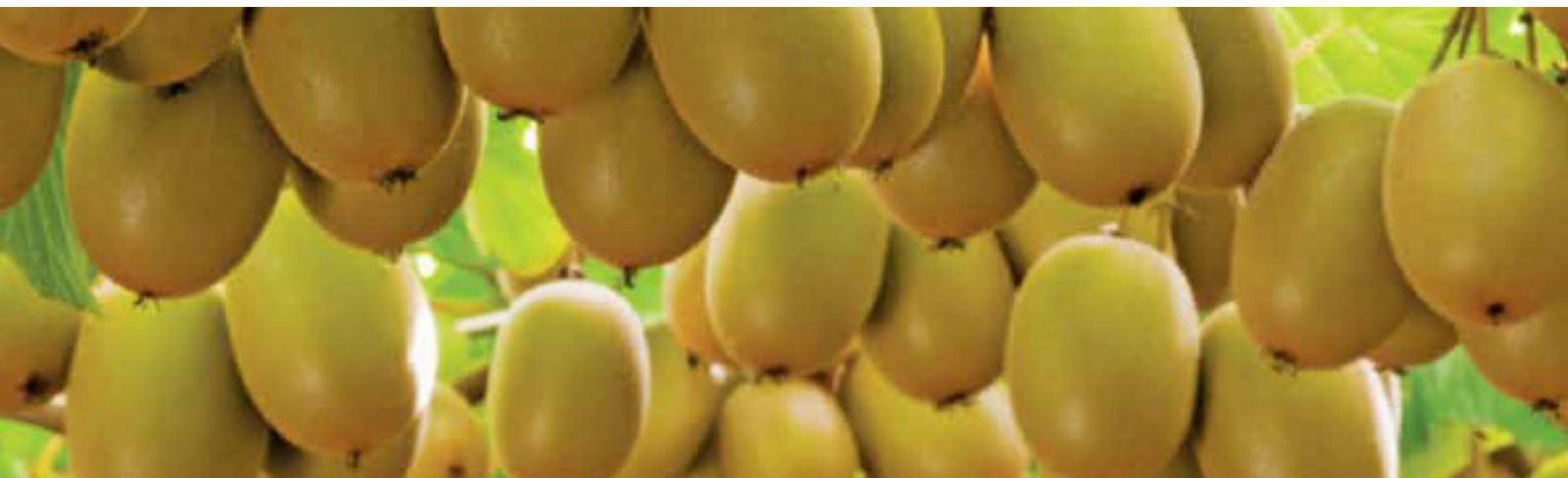
Because of its importance to our economy, the kiwifruit industry affects every New Zealander, particularly those in the Bay of Plenty (BOP) where the majority of kiwifruit are grown. Horticulture supplies over 20 percent of the BOP's gross domestic product (GDP) and is New Zealand's fourth largest primary industry exporter. The horticulture sector is currently facing a shortage of skilled workers entering the industry from secondary and tertiary training.

The horticulture industry is developing strategies to highlight the employment opportunities within

this sector. An example of this is the [InStep](#) programme developed in the Bay of Plenty by [Priority One](#), which connects local secondary schools to businesses by providing students across a range of academic abilities with access to real-life experience in the kiwifruit industry.

Māori represent nearly half of all young people in the BOP region and Māori kiwifruit growers currently contribute \$95 million to the \$1 billion generated by kiwifruit industry exports annually. Approximately one in every 10 hectares of kiwifruit is owned by Māori, and as key players in the industry, their future is intertwined with the future of the industry. [Mātauranga](#) is a group focusing on Māori businesses. Their aim is to partner traditional knowledge and science to gain a better understanding of issues such as the sustainable use of chemicals and the protection of resources, such as water used in kiwifruit production.

The story of the kiwifruit industry in New Zealand has been about world-leading science and innovation, continuous improvements in orchard management practices, and a commitment to supplying high quality, safe and healthy fruit to the world. It is also about partnership, collaboration, and resilience – demonstrated in the face of the arrival and spread of the bacteria Psa-V in 2010. The Psa-V (*Pseudomonas syringae* pv. *actinidiae*) incursion is estimated to have cost the New Zealand kiwifruit industry over \$400 million in costs and loss of revenue. The incursion threatened jobs, not only in orchards, but throughout the supply chain. The Te Puke District in the Bay of Plenty was the hardest hit.





Psa-V spread throughout the Bay of Plenty and to the Waikato, Coromandel, Auckland, Northland, Hawke's Bay, and Poverty Bay. The only kiwifruit growing region without a confirmed Psa-V presence was Nelson.

Zespri partnered with the New Zealand government in 2009 to create a \$37.5 million research consortium to produce new cultivars – the world's largest kiwifruit breeding programme. The Gold3 (SunGold) variety was launched in 2010 and not only has a good level of tolerance to Psa, but has high orchard yields, stores well, and has a great taste. Zespri and the postharvest industry have embarked on a large-scale, supply-chain-efficiency project aiming to create a more efficient supply chain. Zespri is also working with shipping partners to conduct trials using innovative, container-temperature management software, which promises up to 20 percent savings on energy and emissions.

Sustainability is the cornerstone of the kiwifruit industry. Throughout the supply-chain economic, social, cultural, and environmental sustainability are a high priority. Orchardists focus on minimising the impact on the environment while maximising profit on farming. Achieving the balance between economic and environmental sustainability requires innovation throughout the supply-chain. Collaborative partnerships between growers, marketers, scientists, iwi, and government authorities has helped the New Zealand kiwifruit industry to have a relatively small footprint on the land and environment.



# TEACHING AND LEARNING PLAN

## How these resources work

These resources are made up of one snapshot and a set of six activities for the learning areas of maths, science, and social studies. The snapshot has been developed as an introduction to the context of the New Zealand kiwifruit industry and is suitable to be used with students in all learning areas. This can be shared using a variety of approaches (shared, guided, or independent) depending on what best suits the students you teach.

Each of the following social studies activities has been developed to be taught over several sessions and an indicative timeframe for each is as follows:

- Activity one: 2 hours
- Activity two: 1 hour
- Activity three: 3 hours
- Activity four: 2 hours
- Activity five: 4 hours
- Activity six: 3 hours

Once the snapshot has been shared and discussed, choose the relevant set of subject-specific activities to explore this context in more detail.

**ACTIVITY 1:**

## IN THE BEGINNING

Students create a timeline of the New Zealand kiwifruit industry over the past 100 years, detailing how it has changed and contributed to the New Zealand economy.

Discussion questions to support and enhance the understanding of these historical events could include:

- How has the kiwifruit industry changed during this time?
- What are the main factors that have contributed to these changes?
- What did you learn about Isabel Fraser, Hayward Wright, and Jack Turner?
- How could you sequence these events – months, years, colour codes for economic and historical events, other ways?



**SUPPORTING RESOURCES**

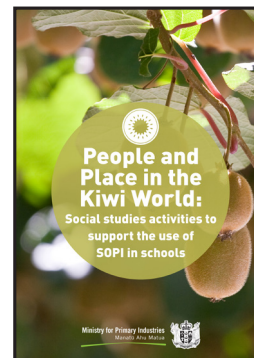
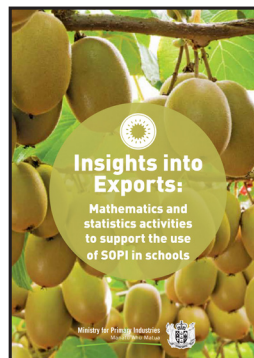
*Solution and Outlook for Primary Industries publications*

- SOPI (2015) Report pages 48-53
- SOPI (2014) Report pages 36-39
- SOPI (2013) Report pages 38-41
- SOPI (2012) Report pages 37-40

*Links and tools for gathering ideas and presenting information*

- Creating electronic timelines
- Isabel Fraser
- Hayward Wright
- Jack Turner
- Te Ara's history of kiwifruit
- Tahono Whenua Horticulture Ltd
- Te Maata a Toi: Māori Kiwifruit Grower Teuiki
- The story of Zespri kiwifruit
- Sustainable the Zespri way
- Breeding Psa resistant kiwifruit – Video produced by Plant and Food Research



**ACTIVITY 1:****IN THE BEGINNING**

Students create a timeline of the New Zealand kiwifruit industry over the past 100 years, detailing how it has changed and contributed to the New Zealand economy.

Discussion questions to support and enhance the understanding of these historical events could include:

1. How has the kiwifruit industry changed during this time?
2. What are the main factors that have contributed to these changes?
3. What did you learn about Isabel Fraser, Hayward Wright, and Jack Turner?
4. How could you sequence these events – months, years, colour codes for economic and historical events, other ways?
5. What value did Kiwifruit Vine Health see in signing up to the Government Industry Agreement?

**SUPPORTING RESOURCES**

Situation and Outlook for Primary Industries publications

- [SOPI \(2016\) Report pages 62-65](#)
- [SOPI \(2015\) Report pages 48-53](#)
- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [Creating electronic timelines](#)
- [Isabel Fraser](#)
- [Hayward Wright](#)
- [Jack Turner](#)
- [Te Ara's history of kiwifruit](#)
- [Tuhono Whenua Horticulture Ltd](#)
- [Te Moana ā Toi: Māori Kiwifruit Grower Toolkit](#)
- [The story of Zespri kiwifruit](#)
- [Sustainability the Zespri way](#)
- [Breeding Psa resistant kiwifruit](#) – Video produced by Plant and Food Research
- [Government Industry Agreement](#) and [Kiwifruit Vine Health](#)





## ACTIVITY 2:

# WHERE IN THE WORLD?

## The extent of Zespri orchards

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Students use maps and statistics to write a report explaining the reasons behind the location of Zespri orchards in New Zealand and offshore.

Discussion questions to support and enhance the understanding of kiwifruit growing locations could include:

1. Using the Kiwifruit Vine Health (KVH) [map](#), discuss how the locations of kiwifruit orchards are connected to:
  - a. the climate
  - b. access to ports
  - c. access to labour.
2. Taking the three factors listed above into account, can you suggest regions that do not have many kiwifruit orchards, where kiwifruit growing could expand?
3. Where does Zespri grow kiwifruit outside New Zealand?
4. Discuss the opportunities and threats Zespri could face by expanding their orchards outside New Zealand.



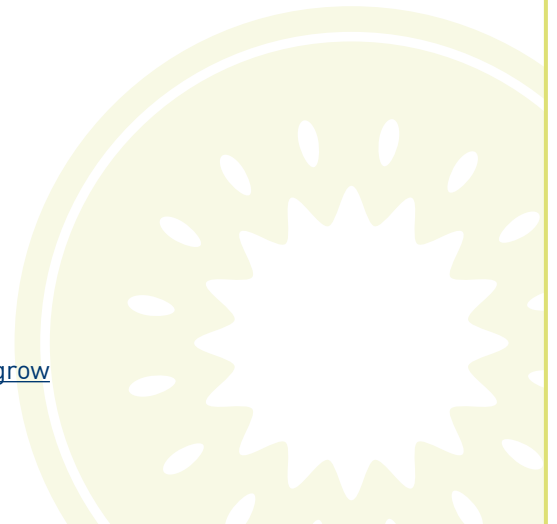
### SUPPORTING RESOURCES

Situation and Outlook for Primary Industries publications

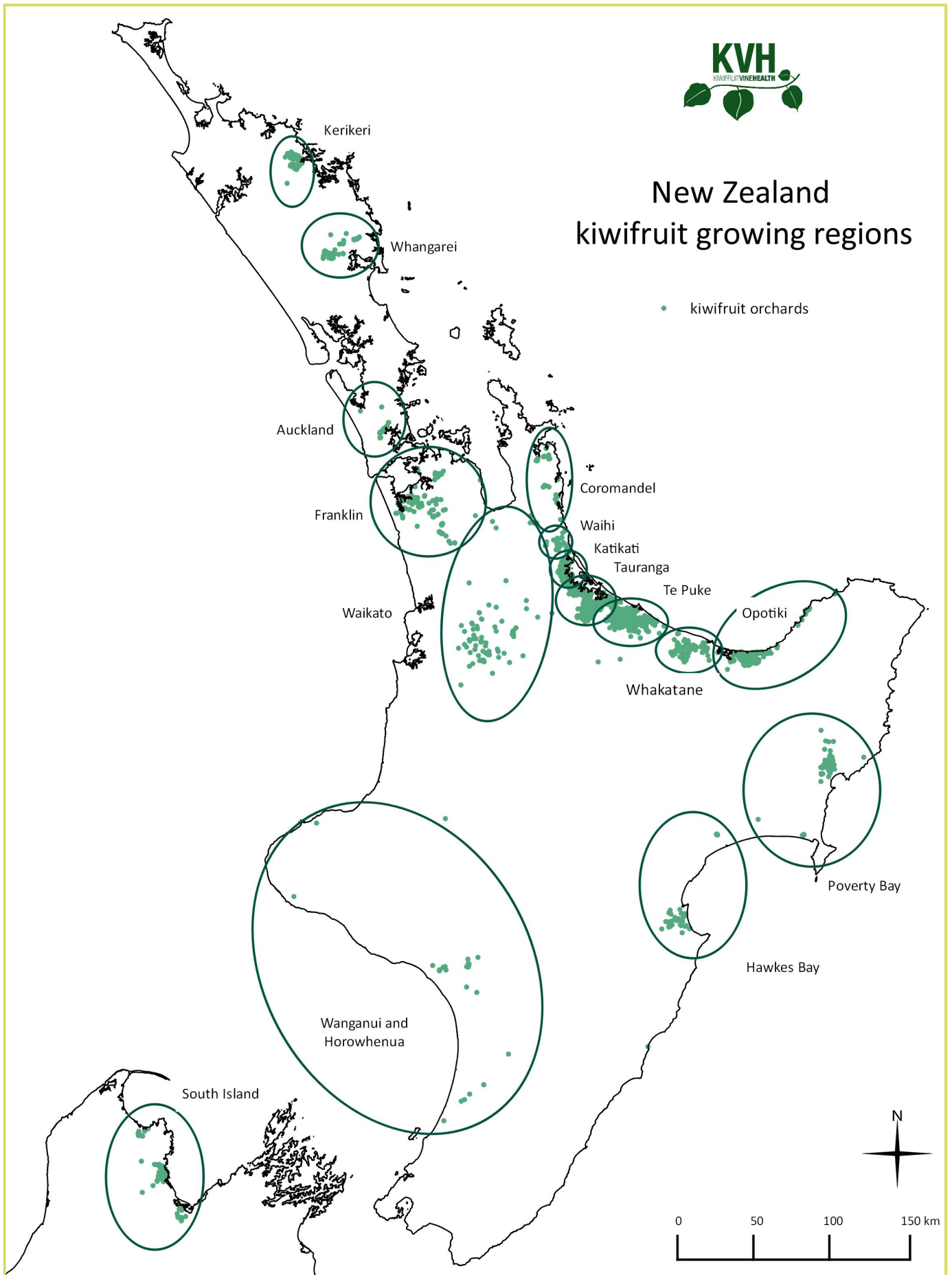
- [SOPI \(2016\) Report pages 62-65](#)
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- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [Map of New Zealand kiwifruit growing regions](#)
- <http://manyanswers.co.nz/topic-kiwifruit-191.aspx>
- [http://www.zespri.eu/en/kiwipedia/\\_where\\_does\\_kiwifruit\\_grow](http://www.zespri.eu/en/kiwipedia/_where_does_kiwifruit_grow)
- <http://digitalnz.org/records?text=KIWIFRUIT>



Kiwi Vine Health (KVH) New Zealand kiwifruit growing regions map

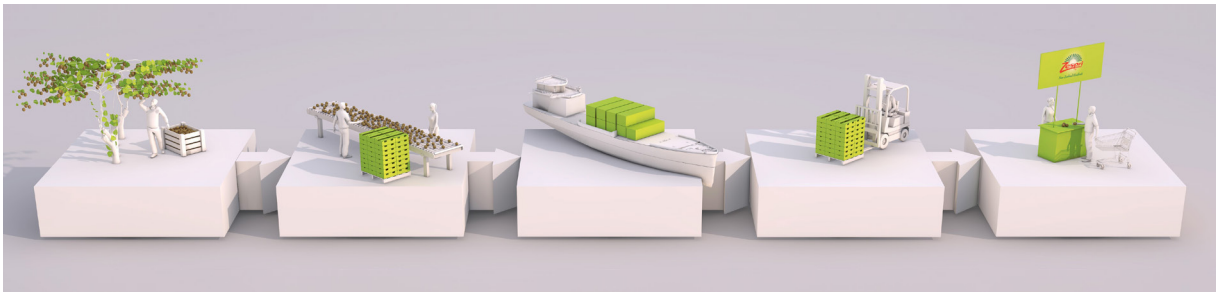


## ACTIVITY 3:

# BUILDING CONNECTIONS

## The kiwifruit supply chain

Research the occupations of people working within the kiwifruit industry and present a visual display about the work involved in one of these occupations. Discuss the roles people working in this occupation play within the supply chain to ensure high quality, safe, and healthy kiwifruit arrives at the marketplace.



Use these discussion starters to enhance students' understanding of kiwifruit production processes from the orchard through to the marketplace.

1. What sort of businesses did you find within the kiwifruit supply chain?
2. What sorts of jobs do people within these businesses do?
3. How are these businesses dependent on each another?
4. What are stakeholders and who are the stakeholders within the horticulture industry?

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Situation and Outlook for Primary Industries publications

- [SOPI \(2016\) Report pages 62-65](#)
- [SOPI \(2015\) Report pages 48-53](#)
- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [From orchard to consumer – Zespri supply chain images](#)
- Industry links: [http://www.kvh.org.nz/industry\\_links](http://www.kvh.org.nz/industry_links)
- Video: [Managing the supply chain](#)
- Video: [Orchard and postharvest work in the kiwifruit industry](#)
- Video: [Packhouse manager](#)
- Video: [Breeding new kiwifruit](#)
- Video: [Keeping kiwifruit fresh around the world](#)
- Video: [History of gold kiwifruit](#)

**ACTIVITY 4:****FACING ADVERSITY****The Psa outbreak**

Students prepare a radio or television interview where they role play stakeholders within the kiwifruit industry discussing how the Psa outbreak has affected their businesses.

Discussion questions to support and enhance students' understanding of this outbreak and the effects it has had on the New Zealand economy include:

1. What economic impact has Psa had on the New Zealand kiwifruit industry?
2. What supports have been put in place to help growers deal with this crisis?
3. How has the Psa incursion affected people in the Bay of Plenty? Who was most or least affected by the outbreak? Why?
4. How do you think the people of the Bay of Plenty might feel now about their reliance on the kiwifruit industry for employment and business revenue?

**SUPPORTING RESOURCES**

Situation and Outlook for Primary Industries publications

- [SOPI \(2016\) Report pages 62-65](#)
- [SOPI \(2015\) Report pages 48-53](#)
- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [Information about Psa from Kiwifruit Vine Health Inc.](#)
- ["Kiwifruit disease Psa explained"](#) Article in the New Zealand Herald, 10 November, 2010
- [Video of press conference for the release of the Psa review](#), 4 July 2012
- [Breeding Psa resistant kiwifruit](#) – Video produced by Plant & Food Research

## ACTIVITY 5:

# CAREER PATHWAYS IN HORTICULTURE



Design a career pathway booklet for students who are interested in a career within the horticulture industry. Choose 2–3 roles within this sector and describe the jobs, a typical day for people working in these occupations, and the skills, training, and/or qualifications required for the roles. Include information such as hours of work, salaries, and opportunities for career advancement.



Discussion starters to support and enhance understanding of the work opportunities within the horticultural industry include:

1. With a partner, take 5 minutes to brainstorm the sorts of jobs that are available within the horticulture industry. Share and record them on a whiteboard or stickies or using [Padlet](#).
2. Have each student focus on 1-2 jobs from the selection above and discuss the skill set needed to do this job and the challenges of the job.
3. Outline the opportunities a job like this offers.

## SUPPORTING RESOURCES

Situation and Outlook for Primary Industries publications

- [SOPI \(2016\) Report pages 48-53](#)
- [SOPI \(2015\) Report pages 48-53](#)
- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [Priority One Instep Programme](#)
- [Zespri information on careers](#)
- [Careers in technology and kiwifruit](#)
- [Careers NZ](#)
- [Careers at Zespri](#)
- [The kiwifruit industry – Orchard and postharvest work](#) – Video produced by NZ Kiwifruit Growers Inc.
- [Seeka uses industry training to grow future leaders](#) – Video produced by Primary ITO

**ACTIVITY 6:****PROTECTING THE AIR,  
WATER AND LAND****Sustainability and the kiwifruit industry**

Students conduct a social inquiry into the sustainability of the kiwifruit industry and evaluate the actions of groups and institutions when promoting a sustainable kiwifruit product for sale.



Discussion questions to enhance and support understandings about sustainability within the kiwifruit industry include:

1. What actions are being taken by individuals, groups, and organisations within the kiwifruit industry to ensure the sustainability of kiwifruit?
2. What threats could the New Zealand kiwifruit industry face if it was not considered to be sustainable?
3. How might different stakeholders within the kiwifruit industry view sustainability differently and how might this create problems for the future? Consider orchardists, Zespri, orchard workers, local iwi, and local government.

**SUPPORTING RESOURCES**

Situation and Outlook for Primary Industries publications

- [SOPI \(2016\) Report pages 62-65](#)
- [SOPI \(2015\) Report pages 48-53](#)
- [SOPI \(2014\) Report pages 36-39](#)
- [SOPI \(2013\) Report pages 38-41](#)
- [SOPI \(2012\) Report pages 37-40](#)

Links and tools for gathering ideas and presenting information

- [Social Sciences planning template](#)
- [Sustainability: the Zespri story](#)
- [Precision agriculture and Kiwifruit sustainability](#)
- [Robotics in kiwifruit](#)
- [What is Mātauranga Māori?](#)
- [The Ballance Award for Sustainability](#)
- [Māori and Horticulture](#)