



St Andrew's College

Year 13 Agriculture 2016

Student Information



Teaching programme

Details of the achievement standards and their specifications

Field Trips

Year 13 Agriculture

Course outline

This course is a University Approved subject and for this reason it is imperative that a solid effort both inside and outside the classroom prevails for the entire year.

The exams and some of the assessment content has changed this year as the standards have been altered to better reflect the new curriculum. Three External exams and 2 internal projects make up this year's course work of 24 credits.

Internal Assessment

3.1 Investigation – This internal standard requires students to carry out an investigation to determine consumer preference for different external and internal processed potato attributes and to make recommendations based on the commercial significance of the findings (your recommendations should be proposed courses of action undertaken by the Potato grower in order to achieve a specific outcome).

Collect, process and interpret your investigative data and document this in your research logbook. Include how you:

- collected and recorded primary data consistent with the final method (make a note of any changes you made to your original planned method)
- processed the primary data relevant to your purpose
- interpreted the processed data and drew valid conclusions that are relevant to the purpose of the investigation.

3.2 Research – This internal is an individual research where the student researches and reports on the impact of factors on the profitability of a New Zealand primary product.

- The report should consider both the internal and external factors impacting on the profitability of a chosen local product, and on the effect of a range of factors on the profitability for the product internationally.
- Products excluded from this research will be: Merino Wool or Lamb and Processed Potatoes
- This assessment task will take place over two terms of in-class and out-of-class time.
- The students are required to gather relevant research information, and the reporting of their research findings must be individual work.
- As this is a research task, students should locate their own resources.

Scholarship

Students are encouraged to enter Scholarship exams and additional teaching sessions will possibly be made available to students wishing to undertake this. **The Scholarship exam is Wednesday 23rd November 2016**

Standards

91530 (3.3) ***Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products*** ***5 credits*** ***External***

91531 (3.4) ***Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s)*** ***4 credits*** ***External***

91532 (3.5) ***Analyse a primary production environmental issue*** ***5 credits*** ***External***

November 14th 2016

External

91529 (3.2) ***Research and report on the impact of factors on the profitability of a New Zealand primary product*** ***6 credits*** ***Internal***

91528 (3.1) ***Carry out an investigation into an aspect of a New Zealand primary product or its production*** ***4 credits*** ***Internal***

Useful sites for background information

1. Throughout the year the school OneNote site will have resources loaded for your use and for some submissions towards assessment
2. The NZQA site has exemplars of these new standards @ <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/ag-and-hort-science/sample-external-assessments/level-3/>

Within this documents are the assessment specifications for the Achievement Standards and Scholarship.

Field Trips

The calendar below details the approximate dates and details for field trips this year. All dates are subject to change as they are subject to approval from management and the availability of those we are visiting.

There will be no overnight field trip in 2016

March 17th Pendarves Potato investigation

May 5th Lamb or Merino investigation

Another date in Term 2 or 3 TBC for environmental Internal investigation

STAC Calendar 2016 Year 13 Agricultural Science

Term 1

Foci :

1. Production of Processed Potatoes and the internal (3.1)
2. Last 3 weeks: Production of Merino Wool or Lamb Production (TBC) (3.4)

Term 2

Foci:

1. Completing (3.1) investigation write up May 7th
2. Continuation of Merino or Lamb production (3.4)
3. Field Trip TBC

4. Introducing Market Forces (3.3)
5. Homework focus 3.2 throughout the term

Term 3

Foci

1. Biodiversity
2. completing 3.2

Term 4

School Exams and Revision

Achievement Standard 3.1

Subject Reference	Agricultural and Horticultural Science 3.1				
Title	Carry out an investigation into an aspect of a New Zealand primary product or its production				
Level	3	Credits	4	Assessment	Internal
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Registered	Status date	4 December 2014		
Planned review date	31 December 2016	Date version published	4 December 2014		

This achievement standard involves carrying out an investigation into an aspect of a New Zealand primary product or its production.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none">Carry out an investigation into an aspect of a New Zealand primary product or its production.	<ul style="list-style-type: none">Carry out an in-depth investigation into an aspect of a New Zealand primary product or its production.	<ul style="list-style-type: none">Carry out a comprehensive investigation into an aspect of a New Zealand primary product or its production.

Explanatory Notes

- 1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and is related to the material in the *Teaching and Learning Guide for Agricultural and Horticultural Science*, Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz>.

Investigations are based on Agricultural and Horticultural contexts that are suitable for assessment at Level 8 Nature of Science of *The New Zealand Curriculum*.

- 2 *Carry out an investigation* involves:
 - producing a statement of purpose
 - planning the method to be used
 - collecting, recording and processing primary data
 - interpreting findings based on own processed data
 - reporting on the findings and relating them to findings from another source relating to the agricultural or horticultural context

- providing a valid conclusion(s) that relates to the purpose of the investigation.

Carry out an in-depth investigation involves:

- developing a method that allows for collection of data that is valid and reliable
- providing a valid conclusion(s) that links key agricultural or horticultural concepts to own findings and to those from other source(s).

Carry out a comprehensive investigation involves:

- evaluating the validity of the method and/or reliability of the data and justifying the choices made throughout the investigation, ie evaluating the validity of the method or reliability of the data and explaining the conclusion in terms of the agricultural or horticultural ideas relevant to the investigation
- providing a valid conclusion(s) that discusses key agricultural or horticultural concepts and either the findings of others, or scientific principles, theories, or models
- conclusions include proposed courses of action, based on the commercial significance of the findings, which the producer may undertake to achieve a specific outcome relating to the primary product or its production.

- 3 *An aspect of a New Zealand primary product or its production* may include product attributes, site selection, and establishment as well as management practices used in production, until the product leaves the grower's control.
 - 4 *A New Zealand primary product* is an agricultural or horticultural product that either earns significant export revenue in unprocessed or processed form, or allows for self-sufficiency within New Zealand.
 - 5 *Production* refers to all aspects of primary production under producer control, such as production process, management practices, and product attributes.
 - 6 Product attributes are measurable characteristics that affect the marketability of a primary product and may include, fat content, sugar levels, size, mass, diameter, tenderness, shelf life, and yield.
 - 7 Management practices may include: fertiliser application, irrigation, pest and/or weed control, pruning, thinning, harvesting, grazing management, dipping, drenching, shearing. Management practices may be manipulated through grower-initiated changes, eg the choice of fertiliser, the rate, method, and/or timing of its application.
 - 8 Conditions of Assessment related to this achievement standard can be found at www.tki.org.nz/e/community/ncea/conditions-assessment.php.
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Achievement Standard 3.2

Subject Reference	Agricultural and Horticultural Science 3.2				
Title	Research and report on the impact of factors on the profitability of a New Zealand primary product				
Level	3	Credits	6	Assessment	Internal
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Registered	Status date	4 December 2014		
Planned review date	31 December 2016	Date version published	4 December 2014		

This achievement standard involves researching and reporting on the impact of factors on the profitability of a New Zealand primary product.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none">Research and report on the impact of factors on the profitability of a New Zealand primary product.	<ul style="list-style-type: none">Effectively research and report on the impact of factors on the profitability of a New Zealand primary product.	<ul style="list-style-type: none">Comprehensively research and report on the impact of factors on the profitability of a New Zealand primary product.

Explanatory Notes

9 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and is related to the material in the *Teaching and Learning Guide for Agricultural and Horticultural Science*, Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz>.

10 *Research and report* involves:

- selecting and processing information related to specific factors that may impact on profitability of a New Zealand primary product
- using the processed information to describe the impact of the factors on the production of a primary

- product
- reporting findings in a logical manner.

Effectively research and report involves:

- interpreting processed information to explain the impact of the factors on the profitability of a primary product.

Comprehensively research and report involves:

- analysing the processed information to justify the impact of the factors on the profitability of a primary product
- reporting findings in a coherent and concise manner, including a summary of key findings.

- 11 *Profitability* refers to the ability to make a profit for the producer. Profitability may be determined by on-farm practices, off-farm processes, and other factors.
- 12 *Factors* may include physical and climatic conditions; social, technological (eg value-added innovations), economic, political, and cultural factors.
- 13 Production refers to all aspects of primary production under producer control, such as production process, management practices, quantity, timing, and product attributes.
- 14 Product attributes are measurable characteristics that affect the profitability of a primary product and may include, fat content, sugar levels, size, mass, diameter, tenderness, shelf life, and yield.
- 15 The report includes:
- a statement of purpose
 - selected and processed information
 - interpretation of findings based on own processed information
 - a valid conclusion(s) that relates to the purpose of the research
 - referencing using a recognised style, so that sources may be verified.
- 16 Conditions of Assessment related to this achievement standard can be found at www.tki.org.nz/e/community/ncea/conditions-assessment.php.
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Replacement Information

This achievement standard replaced AS90649.

Achievement Standard 3.3

Subject Reference	Agricultural and Horticultural Science 3.3				
Title	Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products				
Level	3	Credits	5	Assessment	External
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Registered	Status date	4 December 2014		
Planned review date	31 December 2016	Date version published	4 December 2014		

This achievement standard involves demonstrating understanding of how market forces affect supply of and demand for New Zealand primary products.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none">Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products.	<ul style="list-style-type: none">Demonstrate in-depth understanding of how market forces affect supply of and demand for New Zealand primary products.	<ul style="list-style-type: none">Demonstrate comprehensive understanding of how market forces affect supply of and demand for New Zealand primary products.

Explanatory Notes

- 1 This achievement standard is aligned with *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and based on the outcomes in the *Teaching and Learning Guide for Agricultural and Horticultural Science*, Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz/>.
- 2 *Demonstrate understanding* involves explaining how market forces affect supply and demand for New Zealand primary products.

Demonstrate in-depth understanding involves explaining in detail how market forces affect supply and demand for New Zealand primary products. The detailed explanation includes quantitative data.

Demonstrate comprehensive understanding involves analysing how market forces affect supply and demand for New Zealand primary products. The analysis focuses on the significance and impact of the market forces selected.

- 3 *New Zealand primary products* are agricultural or horticultural products that either earn significant export revenue in unprocessed or processed form, or allow for self-sufficiency within New Zealand.
- 4 *Market forces* are factors internal and external to New Zealand that impact on supply and demand. *Market forces* may include: seasonality, quantity available, quality requirements, reliability of supply, prices, market manipulations, promotion, market trends, consumer preference, political intervention, phytosanitary regulations, exchange rate, weather events, production costs.
- 5 Assessment Specifications for this achievement standard can be accessed through the Agriculture and Horticulture Resources page found at www.nzqa.govt.nz/ncea/resources.

Replacement Information

This achievement standard replaced AS90651 and unit standard 7087.

Achievement Standard 3.4

Subject Reference	Agricultural and Horticultural Science 3.4				
Title	Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s)				
Level	3	Credits	4	Assessment	External
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Registered	Status date	4 December 2014		
Planned review date	31 December 2016	Date version published	4 December 2014		

This achievement standard involves demonstrating understanding of how the production process meets market requirements for a New Zealand primary product(s).

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none">Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s).	<ul style="list-style-type: none">Demonstrate in-depth understanding of how the production process meets market requirements for a New Zealand primary product(s).	<ul style="list-style-type: none">Demonstrate comprehensive understanding of how the production process meets market requirements for a New Zealand primary product(s).

Explanatory Notes

- 17 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and is related to the material in the *Teaching and Learning Guide for Agricultural and Horticultural Science*, Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz>.

- 18 *Demonstrate understanding* involves explaining how the production process meets specific market requirements for a New Zealand primary product(s).

Demonstrate in-depth understanding involves explaining, in detail, how the production process meets specific market requirements for a New Zealand primary product(s). The detail includes quantitative data.

Demonstrate comprehensive understanding involves using detailed explanations to justify how the production process used meets specific market requirements for a New Zealand primary product(s).

- 19 *Production process* refers to the sequence of manipulated management practices from establishment until harvest.
- 20 *Market requirements* may include quality (product attributes and other considerations such as consistency, uniformity, or presentation); quantity; timing, and price.
- 21 *A New Zealand primary product(s)* is a nationally significant agricultural and/or horticultural product in unprocessed or processed form that earns significant export revenue or allows for self-sufficiency within New Zealand, or employs a significant workforce during production and processing.
- 22 Product attributes are measurable characteristics that affect the marketability of a primary product and may include, fat content, sugar levels, size, mass, diameter, tenderness, shelf life, and yield.
- 23 Assessment Specifications for this achievement standard can be accessed through the Agriculture and Horticulture Resources page found at www.nzqa.govt.nz/ncea/resources.
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Replacement Information

This achievement standard replaced unit standard 7088, unit standard 7089, unit standard 7090, and AS90652.

Achievement Standard 3.5

Subject Reference	Agricultural and Horticultural Science 3.5				
Title	Analyse a New Zealand primary production environmental issue				
Level	3	Credits	5	Assessment	External
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Registered	Status date	4 December 2014		
Planned review date	31 December 2016	Date version published	4 December 2014		

This achievement standard involves analysing a New Zealand primary production environmental issue.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none">Analyse a New Zealand primary production environmental issue.	<ul style="list-style-type: none">Critically analyse a New Zealand primary production environmental issue.	<ul style="list-style-type: none">Comprehensively analyse a New Zealand primary production environmental issue.

Explanatory Notes

- 5 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and is related to the material in the *Teaching and Learning Guide for Agricultural and Horticultural Science*, Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz>.
- 6 *Analyse an environmental issue* involves:
- explaining the environmental issue arising from primary production management practices
 - explaining potential courses of action to mitigate the negative impacts of the management practices
 - recommending course(s) of action to support sustainable management practices.

Critically analyse an environmental issue involves:

- explaining, in detail, the environmental issue arising from primary production management practices
- evaluating potential courses of action to mitigate the negative impacts of the management practices. This may include comparing and contrasting alternative courses of action

- recommending course(s) of action to support sustainable management practice(s) that best address the issue.

Comprehensively analyse an environmental issue involves:

- justifying course(s) of action to support sustainable production management practice(s) that best address the issue; this includes environmental, economic, political, and/or social considerations.

- 7 An *environmental issue* results from agricultural or horticultural primary production in New Zealand.
- 8 Impacts of production management practice(s) may be environmental, economic, political, and/or social.
- 9 *Courses of action* refer to responses carried out by the producer that may, potentially, mitigate the negative impacts of the production management practice(s).
- 10 Sustainable production management practices refers to the management of parts of the environment eg water, soil, and/or air to ensure continued use of these natural resources in primary production practices and to minimise negative impacts on the wider environment.
- 11 Production management practices may include: fertiliser application, irrigation, cultivation, effluent management, pest and/or weed control, harvesting, grazing management.
- 12 Assessment Specifications for this achievement standard can be accessed through the Agriculture and Horticulture Resources page found at www.nzqa.govt.nz/ncea/resources.

Replacement Information

This achievement standard replaced AS90653.

Assessment Specifications

General information

Domain Agricultural and Horticultural Science

Level 3

Mode of Assessment Written Examination

For Year 2016

Standards 91530, 91531, 91532

Content / context details

The context of each paper will be suitable for candidates studying agriculture and / or horticulture.

Specific information for individual external achievement standards

Standard 91530 (3.3)

Title Demonstrate understanding of market forces affect supply of and demand for

New Zealand primary products

Version 1

Number of Credits 5

Candidates may be required to demonstrate understanding of:

- at least two products
- both supply and demand factors for at least one product that 'earns significant export revenue'
- Candidates may be required to compare and contrast the market forces on their selected export orientated product with a product provided in a resource.

Standard 91531 (3.4)

Title: Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s)

Version 1

Number of Credits 4

Content / context details

Candidates may be required to demonstrate:

- Candidates may be required to demonstrate understanding of quality considerations such as consistency, uniformity, or presentation for a specific market.

Standard 91532 (3.5)

Title: Analyse a New Zealand primary production environmental issue

Version 1

Number of Credits 5

Special notes

The specified environmental issue for 2014 is the water quality and/or quantity in intensive agriculture

New Zealand Scholarship Agricultural and Horticultural Science

Agricultural and Horticultural Science assessment specification

Scholarship Performance Standard (93105) Agricultural and Horticultural Science

For Year 2016

Format for the assessment for all achievement standards

The paper will comprise three questions, each worth 8 marks.

Candidates are required to answer **ALL questions.**

Each question will have a primary focus on one of:

- export-orientated primary production systems
- issues, perspectives, and conflicts that occur in attempting to achieve sustainable production systems
- contemporary issues that have an impact on the production part of the primary production system.

Special notes

1 Candidates will be required to have detailed understanding of TWO primary production systems from producer to consumer. A primary production system involves the production of one or more products, e.g. a sheep system might produce wool and meat.

2 Candidates will be required to have an understanding of the role of regional councils in ensuring the sustainability of production systems.

3 Contemporary issues are those impacting now or likely to impact in the future on primary production systems.

Contemporary issues for assessment in 2016 are limited to:

Group A

- market access
- value added
- food safety
- traceability/country of origin labelling

Group B

- animal welfare
- biosecurity
- change in land use.

Candidates are expected to be able to discuss:

- At least TWO issues from Group A

- ONE from Group B in relation to their chosen primary production systems.