

Field Sciences**Review of *Agricultural and Horticultural Science* Level 1 achievement and unit standards****Unit standards**

Subfield	Domain	ID
Science	Agricultural and Horticultural Science	7073-7079, 9768, 18984, 18985

Achievement standards

Domain	ID	Subject reference
Agricultural and Horticultural Science	90154, 90155	Agricultural Science 1.6, 1.7
	90156-90160	Agricultural and Horticultural Science 1.1-1.5
	90175, 90745, 90746	Horticultural Science 1.7-1.8

The Ministry of Education and NZQA National Qualifications Services (NQS) have completed a review of the achievement and unit standards listed above.

New Registration date **December 2010**

Date new versions published **December 2010**

Planned review date **December 2014**

Summary of review and consultation process

In 2008 the Ministry of Education (MoE) and NZQA began to review achievement and unit standards in light of the revised New Zealand Curriculum (NZC). This Alignment of Standards (AoS) review also addressed duplication of outcomes, credit parity, fairness, consistency, and coherence. The AoS review was guided by the revised NZC itself and the Standards Review Guidelines. A copy of the NZC is available at <http://nzcurriculum.tki.org.nz/Curriculum-documents/The-New-Zealand-Curriculum>.

Teacher subject associations were involved in the review, and draft achievement standards were the focus of wide consultation, especially with secondary schools and teachers. Extensive resources, including student exemplars, were also developed to support these standards, and are available on the MoE and/or the NZQA websites.

The review of unit standards included consultation with tertiary providers to assess continued relevance and likely future use of the standards. Unit standards that duplicate achievement standard outcomes and those without the likelihood of future tertiary use were recommended for expiry.

National consultation was undertaken in 2009, with the results analysed by Research New Zealand. The responses were generally positive.

The review of unit and achievement standards at Level 1 was completed in time for implementation in schools in 2011. Standards at Levels 2 and 3 will be implemented in 2012 and 2013 respectively.

Main changes resulting from the review

- All NZC level 6 (NZQF Level 1) outcomes derived from the NZC are now assessed using achievement standards, and there are no longer any unit standards linked to the NZC.
- Existing achievement standards were reviewed and new achievement standards were developed to align with the NZC. See [table](#) below.
- Grading criteria for achievement standards were reviewed in accordance with the Standards Review Guidelines.
- Unit standards that recognised similar outcomes as achievement standards were recommended for expiry. See [table](#) below.

For a detailed description of the review of, and the changes to, the *Agricultural and Horticultural Science* standards see the appendix 1 at the end of this report.

Impact on Accreditation and Moderation Action Plan (AMAP)

All new and review category B achievement standards have been registered on AMAP 0233.

Impact on existing qualifications

Qualifications that contain the reviewed standards or classifications are tabled below.

Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following qualification is affected by the outcome of this review. The standard setting body (SSB) has been advised that it requires revision.

Qualification title	Standard in the qualification	SSB Name
National Certificate in Horticulture (Introductory) (Level 2) [Ref: 1013]	7073-7075, 9768, 18984, 18985, 90158, 90175, 90745, 90746	New Zealand Horticulture Industry Training Organisation

Impact of changes on [NCEA Exclusions List](#)

For transition purposes, the following exclusions will apply for new achievement standards. This transition will apply until December 2011 only.

New achievement standard	Excluded against each of these standards
90920	7076
90922	7075

Review Categories and changes to classification, title, level, and credits

The following summary shows the changes made to the standards as a result of the review. All changes are in **bold**. Where a new or a new version of an externally assessed achievement standard is registered, the following designation appears after the title [Externally Assessed].

Key to review category	
A	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
B	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new ID
D	Standard will expire and not be replaced

Externally assessed achievement standards categorised as category D expire at the end of	December 2010
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Internally assessed achievement standards and unit standards categorised as category C or D expire at the end of	December 2011
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The last date for assessment of superseded versions of internally assessed achievement standards categorised as category B is the end of	December 2011
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Sciences > Science > Agricultural and Horticultural Science

ID	Ref	Title	Level	Credit	Review Category
7073	-	Explain and investigate the relationship between a plant husbandry technique and optimum growth	1	6	D
7074	-	Practise and explain plant propagation techniques	1	6	D
7075	-	Modify landscape plans for selected environments	1	4	C
90922	A&HS 1.8	Design a landscape plan that reflects user requirements	1	3	
7076	-	Explain characteristics of primary production and market demand	1	3	C
90920	A&HS 1.4	Demonstrate knowledge of the geographic distribution of agricultural and horticultural primary production in New Zealand	1	3	
7077	-	Explain relationships between animal nutrition and productivity	1	3	D
7078	-	Explain relationships between animal health and productivity	1	3	D
7079	-	Explain relationships between animal reproduction and productivity	1	4	D
9768	-	Explain and investigate the elementary properties of growing media	1	6	D
18984	-	Demonstrate knowledge of plants and plant production	1	2	D

ID	Ref	Title	Level	Credit	Review Category
18985	-	Demonstrate plant propagation and production	1	2	D
90154	AgS 1.6	Describe livestock management and livestock physiology important to this management	1	4	D
90155	AgS 1.7	Describe management practices used in pasture/crop production Demonstrate knowledge of pasture/crop management practices	1	4	B
90156	A&HS 1.1	Carry out a practical agriculture or horticulture investigation with direction	1	4	D
90157	A&HS 1.2	Demonstrate practical skills and knowledge in agriculture or horticulture production Demonstrate practical skills used in agricultural or horticultural production	1	4	B
90158	A&HS 1.3	Describe the properties and management of soil	1	4	D
90159	A&HS 1.4	Describe aspects of primary industry production in New Zealand	1	3	D
90160	A&HS 1.5	Describe the environmental impact of primary production management practices Demonstrate knowledge of the impact on the environment of primary production management practices	1	2 3	B
90175	HortS 1.7	Interpret a landscape plan and redesign it to suit the user(s) and/or environment	1	2	D
90745	HortS 1.6	Describe plant propagation methods	1	3	D
90746	HortS 1.8	Describe plant structure, function and processes, and plant management practices	1	4	D
90918	A&HS 1.1	Carry out a practical agricultural or horticultural investigation	1	4	New
90919	A&HS 1.3	Demonstrate knowledge of soil management practices [Externally assessed]	1	4	New
90921	A&HS 1.6	Demonstrate knowledge of livestock management practices [Externally assessed]	1	5	New
90923	A&HS 1.9	Demonstrate knowledge of basic plant propagation techniques	1	4	New
90924	A&HS 1.10	Demonstrate knowledge of horticultural plant management practices and related plant physiology [Externally assessed]	1	5	New

Subject Reference Key:

A&HS – Agricultural and Horticultural Science

AgS – Agricultural Science
HortS – Horticultural Science

Appendix 1

Development of Agricultural and Horticultural Science Standards

As *Agricultural and Horticultural Science* does not have a specific 'curriculum' derived from one of the learning areas of the *New Zealand Curriculum*, the linkages have been made to outcomes in the subject's Teaching and Learning Guide. This guide has been derived from the NZC.

The process has involved the construction of a draft matrix of standards from NZQF Levels 1–3 that took into account the principles of the standards review regarding progression, duplication, credit parity, internal/external assessment (validity of assessment and balance) and linkages to the draft Teaching and Learning Guide.

Addressing Duplication

There was significant duplication between the outcomes assessed in the reviewed achievement standards and the existing unit standards. It was therefore recommended that all the Level 1–3 unit standards be expired.

Little duplication between *Agricultural and Horticultural Science* standards and standards from other subjects/learning areas was found. The most significant potential overlap was between the *Science* investigations and the *Agricultural and Horticultural Science* investigations at Level 1 but the reviewed standards for each have little in common.

Addressing Credit Parity

The allocation of credits at each level was done with consideration of the notional learning time that is, on average, required for a candidate to meet the outcomes and achievement requirements of a standard. Notional learning time includes time spent in structured tuition, self-paced learning and practice, gathering and providing evidence for assessment purposes and performance in actual assessments. In general, one credit should reflect a notional 10 hours of learning, practice and assessment for an average candidate.

Current credit allocation provided a guide for credit allocation decisions and minor adjustments have been made where it was deemed necessary.

External and Internal Assessment

With the restriction of a maximum of 3 externally assessed standards for each level per subject, the following factors were considered when deciding on which standards would be externally assessed.

- The validity and reliability of the assessment mode (internal/external).
- Any practical assessment constraints that might apply.
- Opportunities for students following an agriculture or horticulture focussed programme to access both assessment modes.
- Feedback from the sector during the matrix consultation regarding which standards should remain externally assessed.
- Examiner reports that indicated standards which currently do not seem to be best assessed by means of an external examination.

What Has Changed?

All standards have been grouped under the single subject reference of *Agricultural and Horticultural Science*. The main changes are described below.

AS90155: (Pasture/Crop): This standard has changed to internal assessment. The significance of pasture in New Zealand is not assessed.

AS90160: This standard is internally assessed. Its credit value has increased from the current two credits to three.

AS90920: This is a new internally assessed standard which focuses solely on geographic distribution (consumer demand and market strategy have not been included). It replaced unit standard 7076.

AS90922: (Landscaping): This is a new internally assessed standard that replaced unit standard 7075.

AS90923: (Plant Propagation): This is a new internally assessed standard. It clarifies the plant propagation techniques that are to be covered.