

Achievement Standard

Subject Reference	Mathematics and Statistics 3.12		
Title	Evaluate statistically based reports		
Level	3	Credits	4
		Assessment	External
Subfield	Statistics and Probability		
Domain	Statistics		
Status	Registered	Status date	4 December 2012
Planned review date	31 December 2020	Date version published	17 November 2016

This achievement standard involves evaluating statistically based reports.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Evaluate statistically based reports. 	<ul style="list-style-type: none"> Evaluate statistically based reports, with justification. 	<ul style="list-style-type: none"> Evaluate statistically based reports, with statistical insight.

Explanatory Notes

1 This achievement standard is derived from Level 8 of *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the achievement objective:

- Evaluate a wide range of statistically based reports, including surveys and polls, experiments, and observational studies:
 - critiquing causal-relationship claims
 - interpreting margins of error

in the Statistics strand of the Mathematics and Statistics Learning Area. It is also related to the material in the *Teaching and Learning Guide for Mathematics and Statistics*, Ministry of Education, 2012, at <http://seniorsecondary.tki.org.nz>.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of the *Marautanga* achievement objectives to which this standard relates, see the [Māori version](#) of the standard.

- 2 *Evaluate statistically based reports* involves identifying and commenting on key features in reports relevant to conclusions made in those reports.

Evaluate statistically based reports, with justification involves supporting the comments made by referring to statistical evidence and processes described in reports, relevant to conclusions made in those reports.

Evaluate statistically based reports, with statistical insight involves integrating statistical and contextual information to assess the quality of reports with respect to conclusions made in those reports.

- 3 Evaluating statistical reports requires familiarity with:

- the statistical enquiry cycle
- principles of experimental design
- surveys and polls, including potential sources of bias
- interpreting statistical inferences
- interpreting a wide variety of statistical tables and graphs
- analysing a wide variety of statistical situations
- critiquing causal-relationship claims
- interpreting margins of error.

- 4 Assessment Specifications for this achievement standard can be accessed through the Mathematics and Statistics Resources page found at <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/>.

Quality Assurance

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0233

Paerewa Paetae

Aronga Pāngarau 3.12

Ingoa Te arotake i te pūrongo tauanga hei tātari i te whaihua o ngā whakapae

Kaupae 3 **Whiwhinga** 4 **Aromatawai** Ā-waho

Marau akoranga Te Marautanga o Aotearoa

Kokonga akoranga Pāngarau

Mana rēhita Kua rēhitatia **Te rā i mana ai** 4 Hakihea 2012

Te rā e arotakengia ai 31 Hakihea 2020 **Te rā i puta ai** 17 Whiringa-ā-rangi 2016

Te Hononga ki te Marautanga

I ahu mai tēnei paerewa paetae i te Taumata 8 o *Te Marautanga o Aotearoa*, i whakaputaina e Te Pou Taki Kōrero i te tau 2008.

Whāinga Paetae

Te Tauanga, Te Aroā Tauanga

3 *Ka arotake i te whānuitanga o ngā momo pūrongo pāpāho, pērā i ngā pōtitanga, ngā tirohanga tauanga, ngā whakamātau me ngā rangahautanga mātakitaki;*

- *ka arohaehae i ngā kōrero mō te takenga mai o tētahi pānga;*
- *ka whakamārama i ngā pae hapa.*

E hono ana ki te Papa Whakaako mō te Pāngarau kei te pae tukutuku nei:

<http://tmoa.tki.org.nz/Te-Marautanga-o-Aotearoa/Taumata-Matauranga-a-Motu-Ka-Taea>

Te Hononga ki *The New Zealand Curriculum (NZC)*

I ahu mai hoki tēnei paerewa paetae i *The New Zealand Curriculum*. Mō ngā kōrero e pā ana ki ngā whāinga paetae o te NZC e hāngai ana ki tēnei paerewa, tirohia te [putanga reo Pākehā](#) o te paerewa.

Te Hononga ki ngā Paearu Aromatawai

Arā ngā Paearu Aromatawai mō tēnei paerewa paetae, kei te:

<http://tmoa.tki.org.nz/Te-Marautanga-o-Aotearoa/Taumata-Matauranga-a-Motu-Ka-Taea>

Paerewa Paetae

<p>Paetae Te arotake i te pūrongo tauanga hei tātari i te whaihua o ngā whakapae.</p>	<p>Hei tohu i te paetae:</p> <ul style="list-style-type: none"> • Ka tautohu i ngā wāhanga o te pūrongo tauanga. • Ka whakaputa kōrero e whakamārama ana i ngā hua i puta i te pūrongo tauanga i runga anō i te āhua o ōna whāinga.
<p>Kaiaka He kaiaka te arotake i te pūrongo tauanga hei tātari i te whaihua o ngā whakapae.</p>	<p>Hei tohu i te kaiaka:</p> <ul style="list-style-type: none"> • Ko te mea nui i konei, ko te parahau i ngā wāhanga o te pūrongo tauanga. Nō reira, ka kitea ēnei: <ul style="list-style-type: none"> – ka tūhono i te mātauranga tauanga me te mārama ki ngā wāhanga katoa o te pūrongo tauanga hei tautohu i te whaihua o ngā whakapae ina whakaritea ki ōna whāinga – ka whakaputa kōrero taunaki e whakamārama ana i ngā painga me ngā ngoikoretanga o te pūrongo tauanga mō te wāhi ki ngā tukanga tīpako me ngā tukanga tirohanga tauanga whānui.
<p>Kairangi He kairangi te arotake i te pūrongo tauanga hei tātari i te whaihua o ngā whakapae.</p>	<p>Hei tohu i te kairangi:</p> <ul style="list-style-type: none"> • Ko te mea nui i konei, ko te whakaatu aroā tauanga hōhonu. Arā, kia kotahi, nui ake rānei o ēnei: <ul style="list-style-type: none"> – ka kōtuitui i te mātauranga tauanga me te mārama ki ngā wāhanga katoa o te pūrongo tauanga hei tautohu i te whaihua o ngā whakapae ina whakaritea ki ōna whāinga – ka whakaputa kōrero taunaki e whakamārama ana i ngā painga me ngā ngoikoretanga o te pūrongo tauanga mō te wāhi ki ngā tukanga tīpako me ngā tukanga tirohanga tauanga whānui.

Kōrero Āpiti

Kia taunga te ākongā ki ngā tikanga o te arotake i te pūrongo tauanga:

- te whakahaere tirohanga tauanga
- ngā tikanga hei waihanga i te whakamātautau tauanga
- te whakamārama i ngā pōtitanga, ngā tirohanga tauanga me ngā haukumetanga ka tūpono mai
- te whakamārama i ngā hīkaro tauanga ka puta
- te whakamārama i ngā momo whakaaturanga tauanga me ngā kauwhata maha
- te tūhura i ngā momo pūāhua tauanga maha
- te arohaehae i ngā kōrero mō te takenga mai o tētahi pānga;
- te whakamārama i ngā pae hapa.

Kuputaka:

aroā tauanga hōhonu
kōtuitui
parahau

statistical insight
integrate, connect
justify

Tātari Kounga

- 1 Me mātua whakamana ngā Kaituku Akoranga me ngā Whakahaere Whakangungu Ahumahi e te Mana Tohu Mātauranga o Aotearoa ka rēhita ai i ngā hua ka puta mai i ngā aromatawai ki ngā paerewa paetae.
- 2 Ko ngā Kaituku Akoranga me ngā Whakahaere Whakangungu Ahumahi kua mana, ā, e aromatawai ana i ā rātou hōtaka ki ngā paerewa paetae, me uru rātou ki ngā pūnaha whakaōrite e tika ana mō aua paerewa paetae.

Ko te tohutoro ki te Mahere Whakamana, Whakaōritenga hoki

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