

Achievement Standard

Subject Reference Physics 3.7

Title Use physics knowledge to develop an informed response to a socio-scientific issue

Level 3 **Credits** 3 **Assessment** Internal

Subfield Science

Domain Physics

Status Registered **Status date** 4 December 2012

Planned review date 31 December 2019 **Date version published** 17 November 2016

This achievement standard involves using physics knowledge to develop an informed response to a socio-scientific issue.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Use physics knowledge to develop an informed response to a socio-scientific issue. 	<ul style="list-style-type: none"> Use physics knowledge to develop an informed and reasoned response to a socio-scientific issue. 	<ul style="list-style-type: none"> Use physics knowledge to develop an informed and comprehensive response to a socio-scientific issue.

Explanatory Notes

- This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8. The standard is aligned to Participating and contributing achievement objective in the Nature of Science strand, and is related to the material in the *Teaching and Learning Guide for Physics*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the [Papa Whakaako](#) for the relevant learning area.

- Use physics knowledge to develop an informed response* involves:
 - explaining the key physics ideas relating to the socio-scientific issue
 - presenting a personal position and proposing action(s) at a personal and/or societal level, using relevant physics knowledge.

Use physics knowledge to develop an informed and reasoned response involves:

- explaining how or why the key physics ideas relate to the socio-scientific issue
- justifying the personal response using relevant physics knowledge to explain why the position and the action(s) have been chosen.

Use physics knowledge to develop an informed and comprehensive response involves:

- linking key physics ideas together to provide a coherent picture of the physics relevant to the socio-scientific issue
- analysing and prioritising the physics knowledge related to the issue to justify the response. This may include:
 - comparing the significance of implications of the issue on individuals and society
 - considering the likely effectiveness of identified action(s)
 - commenting on sources and information, considering ideas such as validity (date, peer reviewed, scientific acceptance), bias (attitudes, values, beliefs), weighing up how science ideas are used by different groups.

- 3 *Physics knowledge* includes physics concepts and principles relating to the issue.
 - 4 A *socio-scientific issue* involves physics and has social implications. The issue is one for which people hold different opinions. Social implications may be economic, ethical, or environmental.
 - 5 It is expected that the physics knowledge required for this standard will be different from that required for AS91522 (Physics 3.2).
 - 6 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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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