

NZQA

New Zealand Qualifications Authority
Mana Tohu Matauranga O Aotearoa

[Home](#) > [Qualifications and standards](#) > [Awards](#) > [New Zealand Scholarship](#) > [Scholarship subjects](#) > [Physics](#)

New Zealand Scholarship Physics

On this page:

- [Physics assessment specification](#)
- [Physics resources](#)

Physics assessment specification

| | |
|--|---------------------|
| Scholarship Performance Standard (93103) | Physics |
| Mode of Assessment | Written Examination |
| For Year | 2016 |

Format of the assessment

The maximum number of questions is six. Individual questions may cover the content of more than one achievement objective in the New Zealand Curriculum up to level 8.

Equipment to bring

A calculator and a ruler.

Resources or information supplied

All necessary formulae, constants, and data will be provided.

All working should be shown in calculations. Numerical answers should be rounded to an appropriate number of significant figures. Correct units must be included. Explanations and calculations are expected to be well set out and concise.

Content/Context Details

Questions may be asked within a variety of appropriate contexts, some of which may be unfamiliar to the candidates. Some questions may involve extended discussion, where the candidate needs to judge what is required.

Questions relating to practical work may include discussions of sources of error, reliability of data collected, and validity of conclusions drawn.

Assessment will be limited to a selection of the content given in the Level 3 physics achievement standards. In relation to P3.5 *Demonstrate understanding of Modern Physics* – the following content knowledge will be required:

- the Bohr model of the hydrogen atom: the photon; the quantisation of energy; discrete atomic energy levels; electron transition between energy levels; ionisation; atomic line spectra; the electron volt
- the photoelectric effect
- wave/particle duality

- qualitative description of the effects of the strong interaction and Coulombic repulsion, binding energy and mass deficit; conservation of mass-energy for nuclear reactions.

Content knowledge from curriculum Levels 6 and 7, relevant to the above standards, will be assumed.

Physics resources

The links listed below are for resources to help teachers and students understand what is required for success in New Zealand Scholarship.

- [Performance standards](#)
- [Top Scholar 2014 \(PDF, 4.6MB\)](#)
- [Outstanding Scholarship Exemplar \(PDF, 3.3MB\)](#)
- [Scholarship Exemplar \(PDF, 3.3MB\)](#)
- Exam materials (question books, resource books, reports, schedules, etc)
 - [2014 exam materials \(ZIP, 1.3MB\)](#)
 - [2013 exam materials \(ZIP, 10MB\)](#)
 - [2012 exam materials \(ZIP, 7.6MB\)](#)
 - [2011 exam materials \(ZIP, 3.7MB\)](#)
 - [2010 exam materials \(ZIP, 1.2MB\)](#)
 - [2009 exam materials \(ZIP, 2.3MB\)](#)
 - [2008 exam materials \(ZIP, 1.4MB\)](#)
 - [2007 exam materials \(ZIP, 1.3MB\)](#)
 - [2006 exam materials \(ZIP, 2.5MB\)](#)
 - [2005 exam materials \(ZIP, 1.2MB\)](#)
 - [2004 exam materials \(ZIP, 1.9MB\)](#)
 - [All years \(ZIP, 32MB\)](#)

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