

## Achievement Standard

**Subject Reference** Science 1.15

**Title** Demonstrate understanding of the effects of astronomical cycles on planet Earth

**Level** 1      **Credits** 4      **Assessment** Internal

**Subfield** Science

**Domain** Science - Core

**Status** Registered      **Status date** 30 November 2010

**Planned review date** 31 December 2014      **Date version published** 30 November 2010

This achievement standard involves demonstrating understanding of the effects of astronomical cycles on planet Earth.

### Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> <li>Demonstrate understanding of the effects of astronomical cycles on planet Earth.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate in-depth understanding of the effects of astronomical cycles on planet Earth.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate comprehensive understanding of the effects of astronomical cycles on planet Earth.</li> </ul>

### Explanatory Notes

- This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 6. It is aligned with the Astronomical Systems achievement objective in the Planet Earth and Beyond strand, and the Nature of Science strand, and is related to the material in the *Teaching and Learning Guide for Science*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>.
- Demonstrate understanding* involves describing astronomical cycles and the effects on planet Earth using information, visual representations, and data.
- Demonstrate in-depth understanding* involves explaining astronomical cycles and the effects on planet Earth using information, visual representations, and data.
- Demonstrate comprehensive understanding* involves explaining thoroughly links between astronomical cycles and the effects on planet Earth using information, visual representations, and data. It may involve elaborating, applying, justifying, relating, evaluating, comparing and contrasting, or analysing.

- 5 *Astronomical cycles* are:
- Spin of the Earth
  - Orbit of Earth around Sun
  - Orbit of Moon around Earth
  - Effect of the Earth's tilt and the heating effect of the Sun.
- 6 *Effects on planet Earth* may be selected from:
- Day and night
  - Seasons
  - Changes of temperature during the day and night
  - Seasonal changes at the North and South poles, latitude of New Zealand, Tropics of Cancer and Capricorn, and the Equator
  - Formation and direction of winds in the Southern hemisphere - direction of surface ocean current flows in the Pacific Ocean
  - Phases of the Moon
  - Formation of tides
  - Neap and Spring tides.
- 7 Conditions of Assessment related to this achievement standard can be found at [www.tki.org.nz/e/community/ncea/conditions-assessment.php](http://www.tki.org.nz/e/community/ncea/conditions-assessment.php).
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### Replacement Information

This achievement standard replaced AS90192.

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### Quality Assurance

- 1 Providers and Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against achievement standards.
- 2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference

0233