

Achievement Standard

Subject Reference Physics, Earth and Space Science 1.1

Title Demonstrate understanding of human-induced change within the Earth system

Level 1 **Credits** 5 **Assessment** Internal

Subfield Science

Domain Science - Core

Status Approved **Status date** December 2023

Planned review date December 2028 **Date version published** December 2023

Purpose Statement

Students are able to demonstrate understanding of human-induced change within the Earth system.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Demonstrate understanding of human-induced change within the Earth system 	<ul style="list-style-type: none"> Explain human-induced change within the Earth system 	<ul style="list-style-type: none"> Analyse human-induced change within the Earth system

Explanatory Notes

1 *Demonstrate understanding of human-induced change within the Earth system* involves:

- describing change within the Earth system that has resulted from human activity
- using science ideas to describe effects of the human-induced change within the Earth system.

Explain human-induced change within the Earth system involves:

- using science ideas to explain how the human-induced change affects the Earth system.

Analyse human-induced change within the Earth system involves:

- discussing scientific implications of the human-induced change within the Earth system.

2 *Human-induced change* within the Earth system is any modification to the Earth system that is directly or indirectly linked to a human activity.

Examples of human-induced change include:

- increased carbon in the atmosphere
- deforestation
- urbanisation.

3 Examples of a *human activity* include:

- mining
- horticulture
- agriculture
- burning fossil fuels
- synthesising plastics.

4 The *Earth system* consists of the interconnected spheres of the atmosphere, biosphere, geosphere, and hydrosphere.

5 Refer to the NCEA [glossary](#) for Māori, Pacific, and further subject-specific terms and concepts.

6 This achievement standard is derived from the Science Learning Area at Level 6 of *The New Zealand Curriculum*: Learning Media, Ministry of Education, 2007.

Replacement Information

This achievement standard and AS92045-AS92047 replaced AS90935-AS90939.

Quality Assurance

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

Consent and Moderation Requirements (CMR) reference 0233
