# Achievement Standard

**Subject Reference** Science 1.5

**Title** Describe aspects of geology

**Level** 1 **Credits** 3 **Assessment** External

**Subfield** Science

**Domain** Science – Core

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This achievement standard involves the description of aspects of geology.

**Achievement Criteria**

| Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|
| • Describe aspects of geology. | • Explain aspects of geology. | • Discuss aspects of geology. |

**Explanatory Notes**

1 This achievement standard is derived from *Science in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1993, p. 118–119, in particular achievement objectives 1 and 2; and *Pūtaiao i roto i te Marautanga o Aotearoa,* Learning Media, Ministry of Education, 1996, 'Ō Mataora: Te Waonui', WP 6.5 and WP 6.6, p. 28–29.

2 *Aspects of geology* will be selected from*:*
- types of rocks
- formation of rocks.

3 Types of rocks will be selected from:

- Igneous:

| ROCK TYPES | | | | |
|---|---|---|---|---|
| Appearance | Silica rich | Intermediate | Silica poor | Volcanic glass |
| fine grained (volcanic) | rhyolite pumice | andesite | basalt scoria | obsidian |
| coarse grained (plutonic) | granite | diorite | gabbro | |

- Metamorphic: slate, schist, marble, gneiss
- Sedimentary: conglomerate, limestone, sandstone, mudstone, siltstone, coal

The design and use of keys to classify rocks may be assessed.

4 Formation of rocks will be selected from:

- formation of igneous rocks:
  - volcanic: basalt, rhyolite, andesite, scoria, pumice, obsidian
  - plutonic: gabbro, diorite, granite
- formation of metamorphic rocks:
  - regional metamorphism, ie slate, schist, gneiss, marble
  - contact metamorphism
- formation of sedimentary rocks:
  - related to water flow: conglomerate, sandstone, mudstone, siltstone.
  - related to environment: limestone, coal.
- rock cycle and the links between geological events and the environment in which rocks are formed: eg sinking land, rising land, rising magma, depositing of sediments, subducting plate boundary
- relative age relationships of rocks in simple stratigraphic columns (rock sequence shown is complete and the correct way up). The analysis of the stratigraphic column could address the order in which events occurred and relationships to geological events.

5 Terms:

- *Describe* requires the student to recognise, name, draw, give characteristics of or an account of.
- *Explain* requires the student to provide a reason as to how or why something occurs.
- *Discuss* requires the student to show understanding by linking scientific ideas. It may involve students in justifying, relating, evaluating, comparing and contrasting, analysing.

**Quality Assurance**

1 Providers and Industry Training Organisations must be accredited by the Qualifications Authority 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 0226