

Achievement Standard

Subject Reference	Science 1.4		
Title	Describe aspects of chemistry		
Level	1	Credits	5
		Assessment	External
Subfield	Science		
Domain	Science – Core		
Registration date	21 October 2003	Date version published	21 October 2003

This achievement standard involves the description of aspects of chemistry.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Describe aspects of chemistry. 	<ul style="list-style-type: none"> Explain aspects of chemistry. 	<ul style="list-style-type: none"> Discuss aspects of chemistry.

Explanatory Notes

- This achievement standard is derived from *Science in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1993, achievement objectives 6.1 and 6.2, p. 100; *Chemistry in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1994, achievement objectives 6.1 and 6.2, p. 18; and *Pūtaiao i roto i te Marautanga o Aotearoa*, Learning Media, Ministry of Education, 1996, 'Ō Kawekawe: Te Waonui', p. 64–65.
- Aspects of chemistry* will be selected from:
 - atomic structure
 - reactions of metals
 - reactions of acids and bases.

- 3 Atomic structure will involve a selection from:
- relating the number of protons, neutrons and electrons in an atom or monatomic ion to the atomic number, mass number and charge
 - stating the electron arrangement of atoms or monatomic ion of the first 20 elements
 - relating the charge of monatomic ions to the position of the element in the periodic table restricted to groups 1, 2, 16 and 17
 - naming or writing the formula of a given salt of type AB, A₂B, AB₂ and salts that require a bracket around a polyatomic ion such as Al₂(SO₄)₃ or Ca(OH)₂ (using a given table of ions).
- 4 Metals are limited to Na, Ca, Mg, Al, Zn, Fe, Pb and Cu, and assessment will involve a selection from the following:
- physical properties – electrical conductivity, thermal conductivity, density, ductility, lustre and malleability
 - reactions of metals – limited to reactions between metals and oxygen, metals and water, and metals with acids
 - relating the properties of metals to their reactivity and uses.
- 5 Acids and bases are limited to HCl, H₂SO₄, metal oxides, hydroxides, carbonates and hydrogen carbonates.
Assessment of the characteristic properties and reactions of acids and bases will involve a selection from the following:
- effects on litmus, universal indicator
 - pH value
 - visible effects of acids on carbonates and hydrogen carbonates
- 6 For achievement, describing aspects will include completing word equations.
For achievement with merit, explaining aspects will include writing word equations or completing given symbol equations.
For achievement with excellence discussing aspects will include writing a balanced symbol equation.
- 7 A table of ions will be provided.
- 8 A periodic table showing symbols, atomic numbers only will be provided.
- 9 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