SCIENCE AS90953
Demonstrate understanding of carbon cycling
Level 1, 4 Credits
(Internal)

This achievement standard involves demonstrating understanding of carbon cycling.

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of carbon cycling.	Demonstrate in-depth understanding of carbon cycling.	Demonstrate comprehensive understanding of carbon cycling.

Carbon atoms cycle through all parts of Earth. Carbon is constantly entering the atmosphere, mainly in the form of carbon dioxide and methane. At the same time, it is being removed by green plants, the oceans, and even rocks. It is also stored for long or short periods of time. This is the carbon cycle.

Carbon cycling includes the addition, removal and storage of carbon.

- ❑ Addition means the release of carbon into the atmosphere as carbon dioxide and methane by:
  - respiration, excretion, decay
  - combustion e.g. the burning of fossil fuels
  - volcanic activity

- ❑ Removal means removing carbon from the atmosphere by:
  - photosynthesis e.g. by phytoplankton, forests
  - dissolving in water e.g. in the surface of oceans

- ❑ Storage means holding carbon as:
  - short-term storage e.g. by forests
  - long-term storage e.g.
    - by sediments
    - carbonate rocks (limestone)
    - coal, oil, natural gas (fossil fuels)
    - subduction resulting in carbon-rich metamorphic and igneous rocks