

Assessment Specifications

General information

Domain	Biology
Level	3
Mode of Assessment	Written Examination
For Year	2014
Standards	91603, 91605, 91606

Format of the assessment

Papers may contain resource-based questions.

Candidates may use annotated diagrams to show evidence where appropriate.

Specific information for individual external achievement standards

Standard	91603
Title	Demonstrate understanding of the responses of plants and animals to their external environment
Version	1
Number of Credits	5

Special notes

Candidates should be familiar with graphical and tabulated data which may include actograms.

Candidates should be familiar with the following terms, with regards to adaptive advantage(s) of a plant or animal to its ecological niche:

Cooperative breeding, courtship, home range, kin selection, agonistic behavior, auxin, exogenous,

endogenous, entrainment, free running period, zeitgeber, photoperiodism, biological clock.

Standard	91605
Title	Demonstrate understanding of evolutionary processes leading to speciation
Version	1
Number of Credits	4

Special notes

There will be an emphasis on groups that contain New Zealand examples.

The examination may also include contexts and examples from elsewhere in the world.

Candidates may be required to show understanding of:

- the concept of natural selection including directional, stabilizing, and disruptive selection and genetic diversity.
- evolutionary change at the population level which reflects underlying changes in allele frequencies.
- the application of molecular biology in terms of proteins and DNA analysis, which may include mtDNA and nuclear DNA

Standard	91606
Title	Demonstrate understanding of trends in human evolution
Version	1
Number of Credits	4

Special notes

Resource material may use the names of currently recognised species. If candidates use named species in their answer, then any information they produce must be consistent with those species named.

Trends are limited to those exhibited by early bipedal hominins onwards and may involve comparison with other living hominids (apes).

Any discussion of the causes of hominin evolution should consider the selection pressures that would lead to evolutionary change.

Cultural evolution covers the following tool cultures and key species associated with them, through to development of agriculture and early settlements:

- Oldowan
- Acheulean
- Mousterian
- Upper Palaeolithic
- Neolithic

Dispersal of hominins covers the period up to 10 000 years ago. Candidates should be able to demonstrate understanding of the ecological/evolutionary changes that could drive such dispersal.

Scientific evidence relating to human evolution may include skeletal remains, nuclear and mitochondrial DNA, tools, evidence from scientific and comparative dating.

Answers must be based on scientific evidence.