

# Assessment Report

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## Level 3 Biology 2021

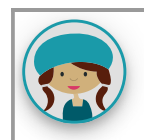
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Standards [91603](#) [91605](#) [91606](#)

### Part A: Commentary

Candidates showed they had spent the time preparing well for the examinations. Many showed clear understanding of the processes and principles needed in each achievement standard and there was evidence they had revised previous examinations to prepare. Student more than ever used all the available paper; this reflects perhaps that they did not sit all three papers, however most often there was a lot of surplus material written that was not asked for. Candidates are best advised to only answer the questions given. This was particularly noticed in 91606.

Where possible, candidates should divide their time equally for each of the 3 questions. Candidates could consider allowing a small amount of time for planning their responses. Candidates should always refer to the stem of the question and use the bullet points to scaffold their responses, rather than using them to directly answer the question. Candidates should incorporate and/or link the relevant resource material into their responses and avoid directly rewriting material from the question in their answers.



# Part B: Report on Standards

## 91603: Demonstrate understanding of the responses of plants and animals to their external environment

### Examination

The exam had three questions, each with bullet points that needed to be answered and linked together to then relate to the stem of the question. Candidates are expected to use the context, not rewrite the question. Candidates were expected to show knowledge of both plant responses and animal behaviour, and link these to the concepts, principles and processes named in the achievement standard and the specification documents.

### Observations

Many candidates did not understand nastic responses and how they brought about the opening and closing of flowers. Large numbers of candidates wrote about photoperiodism and phytochromes, which were not required responses to this year's questions. Many candidates confused key terminology, transposing animal behaviour and responses to plants or vice versa. Talking about non-directional responses but adding positive or negative was also a common mistake. Candidates clearly need to better understand how/why changes in territory size occur, and how holding a territory provides an advantage to the organisms and their mates/offspring. Understanding of how biological rhythms work together and how they provide a selective advantage is important in this aspect of the standard. Actually understanding what the difference between a descriptive, explanatory and discussed level answer and not using pre-learned throw away phrases such as 'the advantages must outweigh the disadvantages' without further clarification or direct tie-in to the question being asked.

A lack of understanding of plant biology was evident, which suggests that many candidates focussed on animal behaviour rather than plant responses.

### Grade Awarding

Candidates who were awarded **Achievement** commonly:

- described key terms and definitions

- provided unrelated related lengthy responses lacking supporting evidence
- provided a strong response in a single question.

Candidates whose work was assessed as **Not Achieved** commonly:

- provided responses about biological ideas not in context of the questions
- provided rote learned responses not relating to question.

Candidates who were awarded **Achievement with Merit** commonly:

- demonstrated understanding of the question
- provided structured responses in the correct context
- used appropriate terminology
- explained the key concepts
- used biological ideas to explain how the responses occurred, and why the responses provided a selective advantage.

Candidates who were awarded **Achievement with Excellence** commonly:

- understood the key concepts
- provided responses specific to the question
- linked biological ideas to explain why the responses provided a selective advantage/increase in genetic diversity/survival of the species for the organisms in all three questions
- evaluated resource material, and used their knowledge to discuss situations provided.

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91605: Demonstrate understanding of evolutionary processes leading to speciation

Examination

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The exam had three questions, each with bullet points that needed to be answered and linked together to then relate to the stem of the question. Candidates are expected to use the context, not rewrite the question. Candidates were expected to show biological knowledge linked to the concepts, principles and processes named in the achievement standard and the specification documents.

## Observations

Candidates need to provide more detail when defining terms at this level of Biology. Where possible, candidates should divide their time equally for each of the three questions. Candidates could consider allowing a small amount of time for planning their responses. Candidates should always refer to the stem of the question and use the bullet points to scaffold their responses, rather than using them to directly answer the question. Candidates should incorporate and/or link the relevant resource material into their responses and avoid directly rewriting material from the question in their answers. Merit and Excellence candidates demonstrated a wide knowledge of content from this achievement standard, as well as an awareness of factors that have led to the speciation of New Zealand's unique flora and fauna. In addition, candidates who “justified, analysed, evaluated, or compared and contrasted” their responses gained success.

## Grade Awarding

Candidates who were awarded **Achievement** commonly:

- provided accurate definitions of speciation and evolutionary processes
- interpreted trends from a phylogenetic tree
- identified evolutionary patterns
- interpreted the resource material provided
- identified relevant geographical barriers as a precursor to allopatric speciation.

Candidates whose work was assessed as **Not Achieved** commonly:

- did not differentiate between gradualism or punctuated equilibrium
- defined species/speciation incorrectly
- did not describe/define genetic drift

- provided a brief description of natural selection
- did not relate mutations in a population/evolutionary context
- did not interpret trends from a phylogenetic tree correctly
- provided or reference an inappropriate case study and not use the resource provided.

Candidates who were awarded **Achievement with Merit** commonly:

- answered the question with detail with links to the resources
- explained the effect of genetic drift on small populations
- explained convergent evolution and the importance independent mutations in this process
- explained punctuated equilibrium as well as incorporated data provided in resource material.

Candidates who were awarded **Achievement with Excellence** commonly:

- provided explanations showing a deeper understanding
- linked ideas and applied biological concepts to the context provided
- provided comprehensive responses on how the factors (mutation, natural selection, and genetic drift) affect evolution
- provided a comprehensive discussion of convergent evolution of species globally
- analysed the data by providing evidence to support the theory of punctuated equilibrium.

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91606: Demonstrate understanding of trends in human evolution

Examination

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Candidates took care when to use hominin, and when to use *Homo sapiens*. Foramen magnum is often a used concept, but the specifics are very confused. Positive feedback loops need full explanations; many candidates repeatedly said everything led to a positive feedback loop. Candidates used the broad term climate change for many answers. Many candidates spent over a page before starting to address the actual question. Nearly every candidate went through the evidence supporting OOA vs. multiregional (mtDNA, Y chromosome, fossils etc.) even though it wasn't asked for. Candidates need to read the question instead of assuming that it's the same as past years and start writing irrelevant information. Candidates need to answer the stem of the question instead of just the bullet points to get to Excellence with using the bullet points as a guide. Candidates need to plan before writing and should carefully read the command terms to give an indication of what level of detail is required for the bullet point.

## Observations

Many candidates wrote a long list of structures related to bipedalism, however did not focus on the cranium and spine as directed. Most candidates simply referred to 'climate change' as a reason for bipedalism. Many candidates wrote well explained answers for benefit of fire and tools, which was pleasing to see. In Question 3, dispersal theories, candidates wrote about all of the evidence for each, however the question did not ask for it. Candidates run out of time if they are writing everything they remember for the standard, and therefore cannot write comprehensive answers to the question asked.

## Grade Awarding

Candidates who were awarded **Achievement** commonly:

- described key terms and definitions
- provided responses out of context without supporting evidence
- did very well in one question, which enabled them to achieve with little knowledge of the other concepts.

Candidates whose work was assessed as **Not Achieved** commonly:

- did not complete all of the questions, or wrote about biological ideas that were not actually appropriate answers for the questions
- rote learned previous papers

- wrote prepared answers that did not relate to question.

Candidates who were awarded **Achievement with Merit** commonly:

- understood the questions and did not just produce rote-learned answers from previous years
- used appropriate terminology and were able to explain the key concepts rather than just identify or describe them
- structured their answers well, following the prompts in the questions
- used biological ideas to explain how the responses occurred, and why the responses provided a selective advantage (in some questions).

Candidates who were awarded **Achievement with Excellence** commonly:

- understood the key concepts and wrote responses that were specific to these questions, as opposed to general answers that were related to the topics
- linked their biological ideas to explain why the responses provided a selective advantage/increase in genetic diversity/survival of the species for the organisms in all three questions
- were able to evaluate.

## [Biology subject page](#)

### Previous years' reports

[2020 \(PDF, 185KB\)](#)

[2019 \(PDF, 155KB\)](#)

[2018 \(PDF, 155KB\)](#)

[2017 \(PDF, 46KB\)](#)

[2016 \(PDF, 218KB\)](#)

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