National Moderator Report 2025
Biology

The following report gives feedback to assist assessors with general issues and trends that have been identified during external moderation of the internally assessed standards in 2024. It also provides further insights from moderation material viewed throughout the year and outlines the Assessor Support available for Biology.

Insights

91602: Integrate biological knowledge to develop an informed response to a socio-scientific issue

Performance overview:

This standard requires the development of a personal response (position and action) based on collated and integrated biological knowledge. Evidence that met the requirements of this standard clearly linked biological knowledge, which included a focus on the biological concepts and processes, to the personal position and action. Sufficient evidence of integrating the previously collated biological knowledge was used to propose, explain and justify why the personal position and proposed action had been chosen.

Practices that need strengthening:

Without further refinement, some contexts did not meet the requirement of Explanatory Note 4 that “the issue is one for which people hold different opinions or viewpoints”. For example, for contexts like diabetes, it was challenging for students to find named people, groups or organisations that have the viewpoint that diabetes is not an issue.

The broad context of a biomedical condition such as rheumatic fever, diabetes or obesity requires refinement. For example, into the socio-scientific issue of what approach would be most suitable for prevention. It is more likely that named people, groups or organisations will have different viewpoints on the best approach. The personal position could then be the approach supported by the balance of biological knowledge.

A stand-alone discourse on the validity and bias of the sources of information does not meet the requirements for developing a comprehensive informed response. Commenting on sources and information is one of three possible criteria that could be used to develop a comprehensive informed response, and therefore needs to be integrated with the personal position. Commenting on sources after the personal position is presented means the commentary has not contributed to the process of developing a comprehensive informed response.

As evidence is selected and collated, integrating commentary on the validity and bias is required. The validity and bias of each source contributes to the evidence used to develop a comprehensive informed response. For example, evidence from unreliable or bias sources would be given less consideration in the process of developing a comprehensive informed response.

91604: Demonstrate understanding of how an animal maintains a stable internal environment

Performance overview:

This standard requires a focus on the internal control processes for maintaining homeostasis within one control system, despite external fluctuation. Evidence that met the requirements of this standard focused on the interaction and feedback mechanisms between the components of the system in response to challenges from a normal range of environmental fluctuations.

Practices that need strengthening:

The "purpose of the system" relates to the homeostatic system selected from Explanatory Note 3, rather than homeostasis in general, as students are required to demonstrate achievement within a single control system. If enzyme kinetics is used as the purpose of body temperature regulation, then this needs to be a step up from curriculum level 7. This could include naming an enzyme and its role in a metabolic pathway, and connecting what would happen if it catalysed that reaction too slowly or not at all due to being denatured.

Some evidence had an over focus on the scenario, rather than using biological ideas related to the control system. Using biological ideas to explain how internal responses from the system regain the set range would address this.

Students who chose body temperature regulation as the control system tended to identify the significant autonomic responses (cutaneous vasodilation and sweating, and peripheral vasoconstriction and shivering), but lacked descriptions of many of the components involved in these processes. This made it challenging for students to describe the interaction and feedback mechanisms between parts of the system to allow an animal to maintain a stable internal environment.

Evidence that met the standard for this control system typically described the hypothalamus or preoptic anterior area of the hypothalamus and the sympathetic nervous system, the peripheral thermoreceptors in the dermis, central thermoreceptors in the core (such as those in the abdominal veins, stomach and oesophagus), and thermosensitive transient receptor potential ion channels. There were also descriptions of cutaneous blood vessels such as arterioles, capillaries, shunt vessels and blood itself, as well as eccrine sweat glands, sweat ducts, sweat and skeletal muscles.

Assessor Support

NZQA offers online support for teachers as assessors of NZC achievement standards. These include:

- Exemplars of student work for most standards*
- National Moderator Reports*
- Online learning modules (generic and subject-specific)**
- Clarifications for some standards*
- Assessor Practice Tool for many standards**
- Webcasts*

*hosted on the NZC Subject pages on the NZQA website.

**hosted on Pūtake, NZQA's learning management system. Accessed via Education Sector Login.

We also may provide a speaker to present at national conferences on requests from national subject associations. At the regional or local level, we may be able to provide online support.

Please contact workshops@nzqa.govt.nz for more information or to lodge a request for support.

To give feedback on this report click on this link.