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Agriculture and Horticulture

2016 Chief Assessor’s Report

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## Overview

Chief Assessors’ reports give an overview of how students performed in their school and external assessments in relation to the learning requirements, assessment design criteria, and performance standards set out in the relevant subject outline. They provide information and advice regarding the assessment types, the application of the performance standards in school and external assessments, the quality of student performance, and any relevant statistical information.

## School Assessment

Assessment Type 1: Practical Skills

There were yet again a wide variety of practical skills tasks undertaken around the state, which reflected the different contexts in which this subject is taught. There were still concerns from the moderators that many students did not have the opportunity to address, or chose not to address, the specific feature I1 of the assessment design criteria, and did not demonstrate a level of analysis and evaluation required at Stage 2.

**The more successful responses**

* provided a clear, considered, individual design of an experimental investigation which included a testable hypothesis, independent and dependent variables, and controlled variables
* demonstrated well-considered analysis of data and the implications for local industry
* evaluated the procedures used, highlighting improvements that could have been made
* made predictions and demonstrated an understanding of the connections between the data collected and the concepts being addressed
* drew conclusions and used these to make recommendations in a variety of contexts
* included a rubric or similar device to demonstrate evidence against the specific features I3 and A3
* showed links between practical activities (e.g. assessing lambs for sale) and the concepts and principles directly related to this activity (e.g. meat quality, animal welfare, market specifications, and sheep marketing)
* provided a connection to current agricultural best practice
* consisted of a variety of activities of Stage 2 standard that reflected the local agricultural context.

**The less successful responses**

* showed little or no evidence of design of an investigation
* lacked depth in analysis of data and evaluation of procedures
* made tenuous, if any, links with current agricultural practice
* did not use information gained to make recommendations in a variety of contexts
* demonstrated practical skills that were consistent with that required at lower-year levels
* were often simply journals or diaries of tasks undertaken with little or no reflection.

**General information**

Since direct student evidence for specific features I3 and A3 is difficult to provide, a rubric or similar device is useful to indicate the skills demonstrated when assessing student performance.

Practical skills tasks should provide opportunities for students to demonstrate their knowledge and understanding of how the activity relates to current industry best practice and to analyse any data generated by the activity. Students should also have the opportunity to draw conclusions from that data, and to use it to make recommendations in a number of different contexts.

The specific feature I1 needs to be covered at least once in Assessment Type 1: Practical Skills, and students are required to submit a design of an investigation. The subject outline clearly states that at least one practical skills assessment must give students the opportunity to design the method. Many students did not individually design the method, while no opportunity for students to design an investigation was sometimes evident.

Assessment Type 2: Skills and Applications Tasks

Once again there were a wide range of tasks presented to students in this assessment type. While tests were commonly used, there were many other task types used to demonstrate learning against the performance standards. The moderators were still concerned that there was a lack of opportunity for students to demonstrate the ability to analyse and evaluate data and information and to apply knowledge to make recommendations in new contexts.

**The more successful responses**

* showed evidence of higher-order thinking skills, rather than simply recall of information, for much of the content
* demonstrated a good understanding of the link between the concepts covered and their implications for real-world agricultural practice
* were assessed against a limited number of specific features for each task
* had a limited number of multiple-choice questions in tests
* answered open-ended questions that allowed the student to demonstrate greater depth and breadth of knowledge and understanding
* responded to task sheets that clearly indicated the specific features being assessed and what to include to address each of these.

**The less successful responses**

* did not show sufficient evidence of analysis and evaluation
* attempted to address specific feature I1 in a skills and applications task
* were often simple research or comprehension tasks, with little evidence of analysis of information provided
* were of a standard expected at lower-year levels.

**General information**

It is important that teachers consider carefully which of the specific features best suit the evidence provided by each task. Addressing all or nearly all of the specific design features in one task can make it difficult for students to demonstrate each of these at a high level. It also should be remembered that, for the 20-credit subject, at least two tasks from this assessment type need to be completed under the direct supervision of the teacher.

## External Assessment

Assessment Type 3: Investigation

Many investigations showed clear improvements from previous years. However, a significant proportion of students presented reports that did not show evidence for some of the specified specific features.

**The more successful responses**

* demonstrated evidence of thorough and timely planning
* showed explicit links to agricultural practice
* posed a question that did not have an obvious or predetermined answer
* provided a clear, considered, individual design of an experimental investigation that included a testable hypothesis, independent and dependent variables, and controlled variables
* provided opportunity for students to demonstrate higher-order scientific thinking skills and analysis and evaluation of the data
* provided an unambiguous outline of the investigation
* used a reasonable sample size
* only contained a summary of the data required to directly address the hypothesis
* were drafted carefully
* did not repeat content
* showed analysis of the results that made a link with the scientific concepts behind the outcomes; for example, saying that an increased protein level leads to increased growth is not in-depth analysis, whereas explaining the biochemical link between protein ingestion and muscle development shows that a student understands the reasons behind the trends they have identified and demonstrates scientific analysis
* clearly identified weaknesses in the experimental design and suggested realistic improvements to overcome these
* included, where appropriate, a discussion of the financial implications of trial outcomes
* included a correctly formatted bibliography and in-text referencing, where appropriate.

**The less successful responses**

* did not relate directly to agricultural practice
* had extremely small sample sizes
* presented copious amounts of raw data without clear summaries showing averages, differences between trial groups, etc.
* presented more data than was required to directly address the hypothesis being tested
* presented graphs of individual results, rather than just the averages for each group
* presented data in graphs that were not formatted correctly, or were the wrong type of graph for the data used
* did not reflect current industry best practice
* did not take advantage of the opportunity to discuss the financial implications of the results; for example, even though using a food high in protein led to increased egg production, it may be that the increased cost of feed outweighed the increased financial return from the extra eggs produced
* did not acknowledge sources of information used in the preparation of the investigation.

**General information**

Teachers should provide explicit teaching of the expected terminology and underlying principles of experimental design. Students benefit from time, beginning in early secondary years, to practise using new terminology and develop experimental skills and become confident in the use of terms such as ‘independent variable’ and ‘random errors’.

The importance of the early planning stages of the investigation cannot be overstated, as this is where, for many students, the success of their investigation was determined. Selection of a topic with, at best, tenuous links to practical farming can severely compromise all aspects of the process and the report. Teachers are encouraged to invest time in planning with their students to ensure problems are avoided.

Most students selected a question that could very easily provide an opportunity for some financial assessment. Comparisons of feed costs, return on investment, profit margins, financial risk management, increased expenses, and improved yield and/or quality can usually be established easily when the topic incorporates strong links to practical agriculture. The section on issues can cover economic, environmental, or social issues related to the agricultural ideas in the investigation, but not the issues that the student had undertaking the trial, or the costs involved in running the trial.

Some students struggled to address all the required specific features because they had already reached the word-limit. Word reduction can be achieved by not including an abstract, contents page, and sections where information is repeated. A concise results section, focusing on the most relevant data can also help to minimise the words used.

Teachers should check students’ drafts for school or student identifiers, such as school uniforms in photos, school names on equipment, and teacher names in the bibliography, and ask students to remove them from the final task submitted for assessment.

## Operational Advice

School assessment tasks are set and marked by teachers. Teachers’ assessment decisions are reviewed by moderators. Teacher grades/marks should be evident on all student school assessment work.

Other points to note:

* The assessment items present in the teacher and student folios should reflect those written into the learning and assessment plan (LAP). If there is a change to the assessment tasks being used, these should be indicated on an addendum and this should be included in the package.
* Assessment tasks should be separated into practical skills, and skills and applications tasks, ideally with a covering summary sheet for each assessment type.
* Teachers should not include letters to moderators in the moderation bag. The only correspondence from teachers about specific students should be via the Variations — Moderation Materials form. This form should be used to provide clear reasons why some students may have missing tasks or different tasks.
* Work that has not been handed in should be assessed as I, not E or D.

## General Comments

Teachers preparing to teach this course in 2017 should take the time to familiarise themselves with the subject minisite on the SACE website, paying particular attention to the subject outline and the subject operational information. There are also a growing number of exemplars available to assist in developing and designing tasks.

Moderation feedback is provided to all schools, and teachers should check their class feedback before commencing the next year. If there are significant changes made to grades, teachers are encouraged to contact the SACE Officer — Curriculum.

All teachers are strongly encouraged to attend the clarifying forum provided by the SACE Board early in the year. The object of this forum is to enhance teachers’ understanding of the performance standards and how they can be best addressed in this subject. There is also a workshop provided by the Agriculture Teachers Association of South Australia following on from the clarifying forum, and this provides an excellent opportunity for the sharing of ideas and discussion of programs and tasks.

All teachers are encouraged to consider applying for a role in assessment panels as either markers or moderators. Teachers who have been involved in these roles appreciate the valuable professional development gained. For more advice, contact the SACE Officer — Curriculum for this subject.

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Chief Assessor