

# **Nutrition**

2012 Chief Assessor's Report



Government  
of South Australia

**SACE**  
Board of SA

# **NUTRITION**

## **2012 CHIEF ASSESSOR'S REPORT**

### **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.

Enrolments for Nutrition were up, to nearly 700 this year, including a small cohort of 5 students who completed the 10-credit Nutrition course.

### **SCHOOL ASSESSMENT**

#### **General Comments**

Again it was pleasing to note at moderation that teachers are using a variety of tasks for both assessment types. The work of the moderation panel in confirming teachers' assessment decisions was greatly assisted when schools submitted the sets of evidence requested by the SACE Board, attached clear task sheets to student work, and used the Variations – Moderation Materials form to indicate when student work was missing.

It was evident that teachers are becoming more confident with their application of the performance standards, although the grades allocated in the assessment of the investigation assessment design criterion were still a little generous in many instances.

#### **Assessment Type 1: Investigations Folio (40%)**

##### **Practical Investigation**

Teachers generally improved the structure of practical investigations so that students had more opportunities to achieve at the highest standards. Reports worthy of an A+ incorporated a concise hypothesis, high levels of analysis of data/results, and a well written discussion and concise conclusion — all making connections to the nutritional and scientific content of the course. It was also pleasing to see more evidence provided that supported the grades given for specific feature A3, which assesses individual and collaborative work skills. However, high grades for specific feature I3, manipulation of apparatus, were often awarded with little or no evidence provided. It is very difficult to confirm assessment decisions when no evidence is provided. Students were generally more successful when tasks indicated the specific features being assessed and had clear details of what was expected from the students.

As identified in 2011, where students design their own method, the design should be assessed prior to students undertaking the investigation so that they receive

feedback if adjustments need to be made before they begin the practical. The grade awarded for specific feature I1 would remain unchanged, but the student has a chance to obtain more useful results.

The investigation and design skills of students were generally good. Concise summary data with appropriate tables and graphs using correct titles and referencing, followed by clear written analysis of them, enabled students to demonstrate their understanding at higher levels. In tasks that involve dietary analysis using FoodWorks software or similar, consideration should be given to setting a word-limit to encourage concise communication in analysis and evaluation. Constructive comments written by teachers on student work enabled moderators to see clearly why particular levels of the performance standards were selected for that assessment.

### **Issues Investigation**

Quality investigations based on a nutritional issue provided arguments both for and against aspects of the issue. The word-limit was adhered to and provided opportunities for concise analysis and reporting. Several teachers achieved this through using a timed task for students to complete the analysis of their investigations. Students brought their annotated notes from resources investigated and a prepared bibliography into the supervised area. Where teachers instructed students to submit two annotated articles with accompanying analysis, the moderators could more easily confirm the particular levels of the performance standards for the task.

## **Assessment Type 2: Skills and Application Tasks (30%)**

Teachers are encouraged to use a variety of assessment formats that provide students with different opportunities to demonstrate their knowledge and understanding. Although the majority of tasks were tests, a number of teachers also included assignments. Where oral presentations are assessed, it is important that evidence, such as student notes or recordings, is provided for moderation purposes, as well as any peer assessments or self-evaluation reports.

Where past examination questions were used, tasks that identified the specific features being assessed, rather than simply using marks for assessment, generally allowed students to demonstrate their learning against the performance standards more successfully. Tasks that include open-ended questions and extended responses also enabled students to reach higher standards of achievement. It was noted that the majority of students were given limited opportunity to undertake extended responses in tests.

## **EXTERNAL ASSESSMENT**

### **Assessment Type 3: Examination (30%)**

#### **General Comments**

This year the examination was split into three question booklets: Question Booklets 1 and 2 had the short-answer questions and Question Booklet 3 had the extended-

response questions. This new format was successful, in that no students used the extended-response booklet to record responses to the short-answer questions.

Questions varied in the level of difficulty, from those that required straightforward information of a factual nature, through to those that required the skills of critical understanding, application, problem-solving, or evaluation of nutritional information. Students are advised to read questions carefully, as students who did not understand the verb used in the question, for example, 'state', 'describe', or 'justify', provided irrelevant or incomplete information. Students also need to be mindful that all information provided in question stems and subsequent parts should be considered when formulating a response.

The average performance of students was a little lower than in previous years. Students should understand that in the short-answer part of the examination paper (Part 1), 2 marks are awarded for each well-expressed, relevant piece of information. Questions worth 4 marks require students to provide two pieces of relevant and well-expressed information. Questions worth 3 marks usually require students to name or state a fact followed by descriptive or explanatory detail.

The extended-response part (Part 2) consists of two questions, and students are expected to address the question that corresponds to the option topic they studied. As in previous years, each question has four main points that students should address sequentially. Each main point is worth 4 marks, and it is expected that students will provide two relevant and well-expressed pieces of information. There are also 4 marks awarded for communication, based on clarity of expression, organisation of information, and relevance to the question. Most students attempted a response to the appropriate question; many were of appropriate length and appropriately structured (use of sentences and paragraphs), but the use of nutrition terminology was poor and responses did not always relate to the question.

Students are also reminded not to use the wording of the question, for example, by paraphrasing, as if it was an answer in itself, particularly in the extended-response part. Incorrect use of terminology and conventions (specific feature A2) was a weakness in both parts of the examination, as was poor written expression (specific feature KU3). Student performance against these two specific features might possibly be improved by more rigorous application of marks schemes, based on the performance standards, when assessing student work throughout the year.

### **Part 1: Short-answer and Analytical Questions**

In general, students who wrote clear and concise answers that related to the question stem (or scenario) performed well. Students are reminded that the number of lines provided for a response gives an approximate guide for the length of response required. Although there is no penalty for longer responses, it does reduce the time available for students to respond to other questions and often does not improve the clarity or relevance of the response. Teachers are encouraged to provide students with opportunities to develop their skills in examination techniques by using similar short-answer questions in tests so that they can practise answering within the lines provided under timed conditions.

#### **Question 1**

In part (a), students were asked to name one risk to a pregnant woman and one risk to a developing foetus if the woman were deficient in folic acid. While many students were able to identify risks associated with malnutrition in general terms, only a small

number were able to state risks specific to folic-acid deficiency using appropriate nutrition terminology. Part (b) was generally well answered, with most students suggesting suitable foods. In part (c), many students failed to appreciate that calcium is not likely to be deficient in an infant over the age of 6 months who is still being breast-fed. While many students suggested a suitable food the mother could consume to reduce the infant's risk of developing the deficiency identified in part (c)(i), some students incorrectly suggested that a vegan could eat red meat (to avoid iron deficiency in the infant).

## **Question 2**

Many students answered part (a) quite well, using the data provided, giving sound detail of different types of fat (saturated, trans, polyunsaturated, omega 3, monounsaturated) and their health impact, and describing how this information would be helpful for consumers to make healthy food choices. In part (b), most students were able to correctly identify one of the 'Percentage of Daily Intake' values (for example, high in protein, 34%) that could be used to market the can of tuna, but they were less successful in describing how it could be marketed. Successful students were able to link and describe how the selected value (for example, 34% protein) could be used to target specific groups of consumers, such as bodybuilders or teenage boys. Many students struggled to answer part (c), in which they were required to discuss one disadvantage of percentage labelling on processed foods. The most common response was that percentage labelling may discourage consumers from purchasing a food, but few linked the answer to how or to whom this could be a disadvantage (for example, the impact on a manufacturer or supplier). The majority of students answered part (d) very well, displaying a good understanding of the distinction between 'made in Australia' and 'product of Australia', although small numbers of students did confuse the two terms.

## **Question 3**

The majority of students were able to identify relevant information on the diagram for parts (a) and (b), providing the ranges for systolic and diastolic blood pressure values including the correct units (mmHg) and correctly identifying the 16-year-old boy's classification to be 'high — Stage 1 hypertension'. Parts (c) and (d)(i) were also correctly answered by most students. Parts (d)(ii) and (d)(iii) were also successfully addressed by most students, who used the data in the table to formulate a relevant conclusion about children's average actual intake of sodium, and to compare the 16-year-old boy's actual intake of sodium to the recommended upper limit and average actual intake of sodium.

Some students were able to explain quite well the link between sample size and reliability of data, and how this impacts on the validity of conclusions drawn from that data in part (e)(i). The majority of students identified cereals as the correct response in part (e)(ii)(1), but then did not provide sufficient detail in parts (e)(ii)(2) and (e)(ii)(3) which required students to suggest two reasons why cereals contributed the highest amount of sodium to the diet of the teenagers surveyed.

In part (f)(i), the majority of students identified a lifestyle strategy, such as preparing breakfast at home. Parts (f)(ii)(1) and (f)(ii)(2) were also well done by most students, who suggested alternatives such as swapping crisps for a piece of fruit, or eating fruit and yoghurt (or a low-sodium muesli) instead of the burger for breakfast. Most students were able to name a micronutrient that could be deficient based on the boys' typical intake, and identified a modification to his diet that would increase the intake of the micronutrient in parts (f)(iii)(1) and (f)(iii)(2). The most common correct

responses were vitamin C or iron, although a small number of students incorrectly named a macronutrient.

#### **Question 4**

Almost all students generally answered part (a)(i) correctly, with higher-scoring students making good use of the data provided in the diagrams and the table. A small number of students then gave a sound explanation in part (a)(ii) as to why David and Andris should consume a wide variety of foods, based on the recommendations of the *Australian Guide to Healthy Eating*. Many students were able to identify factors (for example, David lives alone and works long hours, or Andris is a student who works part-time in a fast-food restaurant and has little time for leisure), but did not suggest how their health status could be improved.

#### **Question 5**

This question was not well answered. Surprisingly, in part (a)(i), few students knew the name of the structure in which faeces are stored, with many confusing the rectum with the large intestine. While successful students correctly gave water absorption or mineral absorption as two roles of the large intestine, a large number of students incorrectly suggested the large intestine was responsible for storing faeces in parts (a)(i) and (a)(ii). Many students also gave quite detailed descriptions of the digestive process in part (b), but neglected to identify or describe the process by which food is moved through the digestive tract via peristalsis. Responses to part (c) were uniformly poor, and few students were able to provide specific functions or specific food examples for the two types of fibre. Most students were able to suggest two specific dietary strategies that could prevent constipation in part (d); for example, increased water or fibre intake. The majority of students were also able to provide two difficulties that a vegan could have maintaining a healthy diet in part (e), with the most common correct responses being insufficient protein or iron.

#### **Question 6**

The calculation in part (a) was reasonably well done, with many students able to round their answer correctly. Students who were successful in part (b) did so by identifying specific ingredients found on the food label as contributing to the total carbohydrate value. For part (c), a small number of students were able to correctly identify a nutritional claim (for example, low in fat or low in salt) and provide suitable justification (for example, low in fat because it contains less than 10 g of fat per 100 g). Nearly all students were able to provide a suitable storage instruction for the packet of soup powder in part (d).

#### **Question 7**

In parts (a) and (b), it was evident that many students misinterpreted the intent of the question, as they did not address economic or environmental factors from the point of view of a *consumer*. For example, buying seasonal fresh produce (such as peaches) from a supermarket can cost the consumer less (as the supermarket often has the ability to buy in bulk and pass savings on to the consumer). An economic disadvantage for the consumer in this situation is that it can be tempting to buy more than is needed or more than can be stored at home when specials are on offer. The environmental advantage and disadvantage were often presented from a producer's or supplier's point of view, rather than the consumer's, so students clearly did not connect the sub-part to the question stem and consequently scored low marks. The

social advantage of shopping regularly at the same shopping outlet in part (c) was well done by the majority of students.

### **Question 8**

The calculation of body mass index (BMI) in part (a) was well done, although some students did not round their final answer to the nearest whole number. Nearly all students answered part (b)(i) correctly, where the most commonly endorsed food selection guide was the *Australian Guide to Healthy Eating*. Students were also successful in stating two recommendations from the endorsed guide in part (b)(ii). The majority of students labelled the graph appropriately in part (c)(i), stated the BMI category to which the boy belonged in part (c)(ii), and listed two long-term health consequences if he remained in the obese category as an adult in part (c)(iii). Parts (d)(i) and (d)(ii) were generally answered well, as most students could explain how a lifestyle change could reduce the BMI. Parts (e) and (f) were generally well answered.

## **Part 2: Extended-response Questions on Option Topics**

Students are expected to answer only one question in Part 2, and it should correspond to the option topic studied in their class. Almost all students answered an extended-response question, with a very few students attempting both questions. In general, students produced well-structured responses of an appropriate length. Higher-achieving students were distinguished by their ability to correctly use appropriate nutrition terminology and to logically and coherently link information and explain connections.

### **Question 9: Global Nutrition and Ecological Sustainability**

While many students were able to name a food production method (for example, net fishing, organic farming methods, and overcropping), very few could provide specific details of the method or how it could reduce yields.

As with the first dot point, most students could name a food production method that had the potential to increase yields, such as crop rotation, genetic modification, mixed farming, and intercropping. While many students were able to provide some detail about the basic principles, few connected that information to sustainability or the impact on yields.

Most students were able to name a non-government organisation, but they neglected to explain how the organisation would contribute to a secure food supply for the two specified groups of people. Common responses in this part were supplying of food packages or food stamps, and setting up community gardens.

While many students gave examples of strategies to provide a sustainable food supply (for example, the use of fuel subsidies or improving infrastructure, such as water, transport, or storage facilities), only a small number were able to explain how the strategy would lead to a sustainable and secure food supply. Many students discussed education as a strategy, but kept it rather generic instead of focusing on a specific aspect relevant to the question.

### **Question 10: Global Hunger**

The majority of students were able to name and describe in some detail at least one deficiency disease, of which anaemia was the most common. However, many

students failed to make links between the deficiency disease and its impact upon a community.

Most students were well able to suggest an appropriate agricultural strategy, although a few, incorrectly, described aquacultural strategies. Higher-achieving students were able to discuss how the suggested strategy would ensure a secure food supply.

Most students struggled to provide a specific example for the role of government and responses often lacked depth. For example, a common response was to 'deal with corruption', but often this was not followed up with a clear explanation of how corruption disrupts fair access to food supplies or how it could be addressed by governments. Another common response was the suggestion to ensure 'equal distribution of food', but neglecting to explain how this strategy could be realistically implemented.

The last dot point was generally quite well answered, with most students demonstrating a high level of understanding of the work of various non-government organisations. The most common examples were Oxfam, World Vision, and the Red Cross. Answers were well considered, with many students writing longer responses for this dot point. Higher-level students mentioned short-term strategies and also focused on long-term strategies as a means to address chronic hunger and improve future food security.

## **OPERATIONAL ADVICE**

Teachers should ensure that they are using the current subject outline, as small changes may occur each year. It would be helpful to both students and moderators if each task has a cover sheet attached which clearly indicates what students are expected to do, which specific features are to be assessed, and an indication of how the assigned grade was achieved.

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