**STAGE 2 NUTRITION**

**ASSESSMENT TYPE 1: Investigations Folio**

**Sensory Evaluation (Design)**

Core Topic 3: Diet Evaluation and Food Selection

**Purpose**

This task provides students with the opportunity to work safely and collaboratively to design and implement a practical investigation to determine sensory superiority of one food product over another.

You implement the investigation, collate the results, form a conclusion, evaluate the procedures, and make recommendations for improvements.

**Description of assessment**

Allows for assessment of collaborative skills.

**Part A**

You work in a small group (3 - 4 students) to design a practical activity that allows you to determine sensory superiority of one food product over another. (Some possible ideas for investigation are listed on the next page).

In the design, you need to:

1. List the members of the group.

Framework provides support for students at all levels to provide evidence of design of an investigation.

1. Identify the type of food you intend to test.
2. State the hypothesis you plan to test.
3. Identify the independent variable (the variable that will be deliberately changed) e.g. the ingredients/product/brands/labelling.
4. Identify the dependent variables (the variable that is being measured) e.g. taste, smell, appearance, volume, texture, keeping quality.
5. Identify at least four factors which will be kept constant in the investigation and explain why this is done.
6. As a group, indicate the procedures you follow to:
* acquire the raw data:
	+ including numbers of taste testers
	+ when the tasting will occur
	+ how you will standardise the tasting
	+ how you will meet ethical and hygienic requirements
* combine results from other group members
* display results – e.g. as tables and/or graphs.
1. List the products to be used, together with the costing.

When the design is complete, submit one copy of the group’s design to your teacher for assessment.

**Part B**

1. Once your design has been approved, implement the design, conducting the taste testings for sensory characteristics as outlined in the design.
2. Collaborate with your group members to collect, record, and collate raw data and include a copy of this in the appendix of your individual reports.

Detailed instructions and report format guidelines enable students to provide evidence of evaluation of procedures.

**Part C**

Prepare a written report in which you:

* display a summary of your results
* evaluate the investigation and suggest improvements
* discuss possible sources of random and systematic error
* discuss safety, collaborative, and ethical issues which are relevant to the investigation
* form a conclusion.

See report format on next page.

**Assessment conditions**

You work collaboratively for Parts A and B. You prepare an individual report (Part C). This report should follow the format on page 2 and be submitted 3 days after collecting and collating the data.

**Investigation ideas**

* Cakes or muffins of the same variety do not have the same quality of sensory characteristics e.g. chocolate cakes have higher sensory appeal than chocolate muffins.
* How food is promoted (labelled) affects sensory appeal, even if the products are identical.
* Generic brands versus name brand products. For example: Are name brand crackers more appealing than home brand crackers?

**The report format**

*Aim*

*Hypothesis to be tested*

*Introduction (about 50 words)*

* Name the group members.
* Briefly explain your practical and outline intended outcomes.

*Method and Materials*

* Insert your design here if it was not changed by your teacher. If it was changed, submit the revised method and materials (not included in word count).

*Results*

* Present a summary of the results using labelled diagrams, photographs, tables, and/or graphs as is appropriate.

*Discussion - analysis and evaluation (about 350 words)*

* Critically analyse the data.
* Evaluate the investigation and suggest improvements. This should include assessing strengths and weaknesses of the practical and discussing inconsistencies and their effect on reliability of data.
* Discuss possible sources of error.
* Form a concise conclusion. (Was the hypothesis supported or refuted by your results?)

Enables students to provide evidence of collaborative skills (**Application**) and safe implementation of investigation procedures (**Investigation**) to support teacher observations.

*Review of safety, collaboration, ethical issues (about 350 words)*

Questions you might consider include:

* How effectively did you contribute to planning and organising required aspects of the practical activity?
* To what extent did you assume individual responsibility for agreed tasks and/or decisions as a member of a group?
* How effectively did you communicate with other members of a group?
* How effectively did you discuss & collate data, results, and conclusions?
* What safety precautions were taken and why?
* Were there ethical issues to be considered? What? Why?

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| ***Learning Requirements*** | ***Assessment Design Criteria*** | ***Capabilities*** |
| 1. Identify and formulate questions, hypotheses, and purposes that guide nutrition investigations and their design
2. Design, safely conduct, and evaluate investigations, and apply knowledge and problem-solving skills to individual and collaborative practical tasks
3. Select and use evidence to analyse, compare, and evaluate strategies for the prevention and management of disorders related to diet and lifestyle, and to make recommendations for promoting good health
4. Communicate knowledge and understanding of nutrition using the terms and conventions of the language of nutrition to suit particular purposes and contexts
5. Critically evaluate and apply knowledge and understanding of nutrition to identify and explain decisions based on ethical, personal, social, environmental, and/or economic factors that influence the diet and lifestyle choices of individuals and communities
6. Demonstrate knowledge and understanding of, and respect for, varying cultural influences on diet and lifestyle decisions.
 | InvestigationThe specific features are as follows:* + I1 Design of nutrition investigations.
	+ I2 Selection and acknowledgment of information about nutrition and issues in nutrition from different sources.
	+ I3 Manipulation of apparatus, equipment, and technological tools to implement safe and ethical investigation procedures.
	+ I4 The obtaining, recording, and display of findings of investigations using appropriate conventions and formats.

Analysis and EvaluationThe specific features are as follows:* AE1 Analysis of data and concepts and their connections, to formulate conclusions and make relevant predictions.
	+ AE2 Evaluation of procedures, with suggestions for improvements.

ApplicationThe specific features are as follows:* + A1 Application of nutrition concepts and evidence from investigations to solve problems and to promote good health in new and familiar contexts.
	+ A2 Use of appropriate nutrition terms and conventions.
	+ A3 Demonstration of skills in individual and collaborative work.

Knowledge and UnderstandingThe specific features are as follows:* + KU1 Demonstration of knowledge and understanding of nutrition concepts.
	+ KU2 Use of knowledge of nutrition to understand and explain issues related to diet, lifestyle, culture, and health.
	+ KU3 Communication of knowledge and understanding of nutrition in different contexts, using different formats.
 | CommunicationCitizenshipPersonal DevelopmentWorkLearning |

Performance Standards for Stage 2 Nutrition

|  | Investigation | Analysis and Evaluation | Application | Knowledge and Understanding |
| --- | --- | --- | --- | --- |
| A | Designs logical, coherent, and detailed nutrition investigations.Critically and logically selects and consistently and appropriately acknowledges information about nutrition and issues in nutrition from a range of sources.Manipulates apparatus, equipment, and technological tools carefully and highly effectively to implement well-organised safe and ethical investigation procedures.Obtains, records, and displays findings of investigations using appropriate conventions and formats accurately and highly effectively. | Critically and systematically analyses data and their connections with concepts, to formulate logical and perceptive conclusions and make relevant predictions.Logically evaluates procedures and suggests a range of appropriate improvements. | Applies nutrition concepts and evidence from investigations to suggest solutions to complex problems and to promote good health in new and familiar contexts.Uses appropriate nutrition terms and conventions highly effectively.Demonstrates initiative in applying constructive and focused individual and collaborative work skills. | Consistently demonstrates a deep and broad knowledge and understanding of a range of nutrition concepts.Uses knowledge of nutrition perceptively and logically to understand and explain issues related to diet, lifestyle, culture, and health.Uses a variety of formats to communicate knowledge and understanding of nutrition in different contexts coherently and highly effectively. |
| B | Designs well-considered and clear nutrition investigations.Logically selects and appropriately acknowledges information about nutrition and issues in nutrition from different sources.Manipulates apparatus, equipment, and technological tools carefully and mostly effectively to implement organised safe and ethical investigation procedures.Obtains, records, and displays findings of investigations using appropriate conventions and formats mostly accurately and effectively. | Clearly and logically analyses data and their connections with concepts, to formulate consistent conclusions and make mostly relevant predictions.Evaluates procedures and suggests some appropriate improvements.  | Applies nutrition concepts and evidence from investigations to suggest solutions to problems and to promote good health in new and familiar contexts.Uses appropriate nutrition terms and conventions effectively.Applies mostly constructive and focused individual and collaborative work skills. | Demonstrates some depth and breadth of knowledge and understanding of a range of nutrition concepts. Uses knowledge of nutrition logically to understand and explain issues related to diet, lifestyle, culture, and health.Uses a variety of formats to communicate knowledge and understanding of nutrition in different contexts coherently and effectively. |
| C | Designs considered and generally clear nutrition investigations.Selects with some focus, and mostly appropriately acknowledges, information about nutrition and issues in nutrition.Manipulates apparatus, equipment, and technological tools generally carefully and effectively to implement safe and ethical investigation procedures.Obtains, records, and displays findings of investigations using generally appropriate conventions and formats with some errors but generally accurately and effectively. | Analyses data and their connections with concepts, to formulate generally appropriate conclusions and make simple predictions, with some relevance.Evaluates some procedures in nutrition and suggests some improvements that are generally appropriate. . | Applies nutrition concepts and evidence from investigations to suggest some solutions to basic problems and to promote good health in new or familiar contexts.Uses generally appropriate nutrition terms and conventions with some general effectiveness. Applies generally constructive individual and collaborative work skills. | Demonstrates knowledge and understanding of a general range of nutrition concepts. Uses knowledge of nutrition with some logic to understand and explain one or more issues related to diet, lifestyle, culture, and health.Uses different formats to communicate knowledge and understanding of nutrition in different contexts with some general effectiveness. |
| D | Prepares the outline of a nutrition investigation.Selects and may partly acknowledge one or more sources of information about nutrition or an issue in nutrition.Uses apparatus, equipment, and technological tools with inconsistent care and effectiveness and attempts to implement safe and ethical investigation procedures.Obtains, records, and displays findings of investigations using conventions and formats inconsistently, with occasional accuracy and effectiveness. | Describes basic connections between some data and concepts, and attempts to formulate a conclusion and make a simple prediction that may be relevantFor some procedures, identifies improvements that may be made. | Applies some evidence to describe some basic problems and identify one or more simple solutions, or to promote good health, in familiar contexts.Attempts to use some nutrition terms and conventions that may be appropriate. Attempts individual work inconsistently, and contributes superficially to aspects of collaborative work. | Demonstrates some basic knowledge and partial understanding of nutrition concepts. Identifies and explains some nutrition information that is relevant to one or more issues related to diet, lifestyle, culture, and health.Communicates basic information about nutrition to others, using one or more formats. |
| E | Identifies a simple procedure for a nutrition investigation.Identifies a source of information about nutrition or an issue in nutrition.Attempts to use apparatus, equipment, and technological tools with limited effectiveness or attention to safe or ethical investigation procedures.Attempts to record and display some descriptive information about an investigation, with limited accuracy or effectiveness. | Attempts to connect data with concepts, formulate a conclusion, and make a prediction.Acknowledges the need for improvements in one or more procedures. | Identifies a basic problem and attempts to identify a solution or promote good health in a familiar context.Uses some nutrition terms or conventions.Shows emerging skills in individual and collaborative work. | Demonstrates some limited recognition and awareness of nutrition concepts. Shows an emerging understanding of an issue related to diet, lifestyle, culture, and health.Attempts to communicate information about nutrition. |