



Government of **Western Australia**
School Curriculum and Standards Authority

FOOD SCIENCE AND TECHNOLOGY

ATAR COURSE

Year 11 syllabus

IMPORTANT INFORMATION

This syllabus is effective from 1 January 2015.

Users of this syllabus are responsible for checking its currency.

Syllabuses are formally reviewed by the School Curriculum and Standards Authority on a cyclical basis, typically every five years.

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Rationale

Food impacts every aspect of daily life and is essential for maintaining overall health and wellbeing. The application of science and technology plays an important role in understanding how the properties of food are used to meet the needs of consumers and producers. Food laws and regulations govern the production, supply and distribution of safe foods. Students develop food-related understandings and attitudes that enhance their problem-solving abilities and decision-making skills.

In the Food Science and Technology ATAR course, students explore innovations in science and technology and changing consumer demands. New and emerging foods have encouraged the design, development and marketing of a range of products, services and systems. Students investigate food issues and advertising strategies used to promote food products. They examine influences on the supply of food for the world's population and explore issues associated with food security, equity and sustainability.

This course enables students to develop their interests and skills through the design, production and management of food-related tasks. They develop knowledge of the sensory, physical, chemical and functional properties of food and apply these in practical situations.

Food and allied health sectors represent a robust and expanding area of the Australian and global employment markets. The Food Science and Technology ATAR course enables students to connect with further education and training, university and employment pathways, and enhances employability and career opportunities in areas that include nutrition, health, food and beverage manufacturing, food processing, community services, hospitality, and retail.

Course outcomes

The Food Science and Technology ATAR course is designed to facilitate achievement of the following outcomes.

Outcome 1 – Understanding food

Students understand foods are used and processed to meet identified needs.

In achieving this outcome, students:

- understand the properties of foods and related equipment used to meet needs
- understand foods are used to meet the body's needs
- understand the nature and operation of food-related systems.

Outcome 2 – Developing food opportunities

Students apply the technology process to develop food-related products, services or systems.

In achieving this outcome, students:

- investigate issues, values, needs and opportunities
- devise and generate ideas and prepare production proposals
- organise, implement and manage production processes in food-related environments
- produce food products, services or systems
- evaluate plans, results and actions.

Outcome 3 – Working in food environments

Students apply skills and operational procedures to work in productive food-related environments.

In achieving this outcome, students:

- apply self-management and communication skills in food-related environments
- apply organisational skills when undertaking food-related challenges and activities
- apply operational procedures and practical skills to safely meet defined standards.

Outcome 4 – Understanding food in society

Students understand food products, systems and innovations in relation to current and future development.

In achieving this outcome, students:

- understand that beliefs and values of consumers and producers impact on food-related technologies
- understand that resource management decisions affect developments in food-related industries
- understand the importance of safe, sustainable practices when developing and using food-related technologies.

Organisation

This course is organised into a Year 11 syllabus and a Year 12 syllabus. The cognitive complexity of the syllabus content increases from Year 11 to Year 12.

Structure of the syllabus

The Year 11 syllabus is divided into two units, each of one semester duration, which are typically delivered as a pair. The notional time for each unit is 55 class contact hours.

Unit 1 – Food science

In this unit, students explore how sensory, physical and chemical properties influence the selection, use and consumption of raw and processed foods. Using scientific methods, they examine the functional properties, which determine the performance of food. Students explore societal and economic issues and lifestyles that influence food choices.

Students examine primary and secondary food processes that affect nutrition, food quality and supply. They research the effect of under-consumption and over-consumption of nutrients on health and investigate a range of diet-related health conditions that affect individuals and families.

Students develop their expertise with technology and communication skills to implement strategies to design food products, services or processing systems. They select resources to meet performance requirements and use evaluation strategies to monitor and maintain optimum standards. Students follow occupational safety and health requirements and safe food handling practices. They use a variety of foods and processes to produce and evaluate food products, services or systems.

Unit 2 – The undercover story

This unit focuses on food spoilage and contamination and explores reasons for preserving food. Students investigate food processing techniques and preservation principles. They consider the laws and regulations that determine the way food is safely preserved, packaged, labelled and stored.

Students learn how the principles of the Hazard Analysis Critical Control Point (HACCP) system are implemented to produce and provide safe food. They investigate the food supply chain, natural and processed functional foods and value-adding techniques that are applied to food to meet producer and consumer requirements. Students examine cultural traditions, beliefs and values, location, economic and media influences on the nutritional wellbeing of individuals that arise from lifestyle and food choices.

Students apply their knowledge of the technology process to meet design specifications, including legal requirements and devise food orders, production plans, and produce safe, palatable, quality food. Students implement the principles of dietary planning, use food models, and adapt recipes and processing techniques when considering specific nutritional needs of demographic groups.

Each unit includes:

- a unit description – a short description of the focus of the unit
- unit content – the content to be taught and learned.

Organisation of content

For each unit, the content is organised into:

- Nature of food
- Processing food
- Food in society.

Nature of food

Food as a commodity

Food commodities come from many different sources and can be classified as either animal or plant and raw or processed. As individuals choose and purchase food they consider social, nutritional, environmental and economic factors. The variety of a raw food influences its potential use and performance. The continuous supply of safe, quality food is achieved through primary and secondary production practices and systems. The concept of value-adding to food is to provide food products to meet the needs and requirements of different demographic groups.

Properties of food

Foods are complex mixtures of substances composed of nutrients and chemical compounds. These mixtures, and how they are processed, give foods their sensory, physical and chemical properties. The changes that occur during food preparation, processing and storage are described as the functional properties of foods, not all of which are desirable. The functional properties of foods determine the way foods are selected, stored, prepared and presented. Food spoilage and contamination can occur from certain environmental factors, enzymatic activity and microbial contamination. Foods can be preserved to extend shelf life, preserve nutritional value, provide out of season availability and economic viability.

Nutrition

Ensuring a balanced diet appropriate to individual needs and optimal health requires an understanding of food values, the food source and the role of specific macronutrients and micronutrients in the body. Nutrition-related health conditions, such as the effect of under-consumption of nutrients on health, including anaemia, osteoporosis, malnutrition and constipation and the over-consumption of nutrients, including obesity, cardiovascular disease and Type 2 diabetes are explored. Food selection models, dietary guidelines and goal setting are used to achieve and evaluate nutritional health.

Processing food

Food products and processing systems

The technology process is used to create food products, services and systems. The process involves investigating, devising, producing and evaluating wet processing techniques and dry processing techniques to develop a range of food products. Product proposals are used to guide the technology process and analyse the final outcome. Using the principles of preservation, the development of preserved food products is managed by organising, implementing and adjusting processes. A range of methods is used when testing, reporting, evaluating and analysing food products.

Food in society

Food issues

Beliefs and values that relate to needs, wants, lifestyles, health and living standards underpin food issues of individuals and communities. Solutions to issues often trigger innovations and trends in foods and related industries. These, however, may have unforeseen ethical, environmental, economic, social and health consequences that in turn create new and different issues. Informed consumers understand concepts, such as planning, pricing, placement, packaging, distribution, sales and advertising when making decisions about product selection.

Laws and regulatory codes

Legal processes regulate the interaction between consumers and food-related enterprises. Industry and consumer associations work to influence policy, legislation and practices impacting systems that regulate food availability, safety and quality. Food handling and related risk management systems, advertising, labelling, processing and production practices, occupational safety and health are regulated in Australia.

Progression from the Year 7–10 curriculum

This syllabus continues to develop student knowledge, understandings and skills from both the Year 7–10 Technologies curriculum and the Year 7–10 Health and Physical Education curriculum.

Representation of the general capabilities

The general capabilities encompass the knowledge, skills, behaviours and dispositions that will assist students to live and work successfully in the twenty-first century. Teachers may find opportunities to incorporate the capabilities into the teaching and learning program for the Food Science and Technology ATAR course. The general capabilities are not assessed unless they are identified within the specified unit content.

Literacy

Students develop literacy capability as they communicate ideas, concepts and detailed proposals for a variety of audiences. They comprehend and compose a range of visual and digital texts, read and interpret detailed written instructions, such as product proposals and recipes for devising, producing and analysing food products and processing systems. They prepare detailed specifications for production, analyse sources of information that influence food choices and the health and wellbeing of individuals, families and communities in an organised, logical and coherent manner. They learn to understand and use language to discuss and communicate information, concepts and ideas related to food, for example, food diversity and security.

Numeracy

Students develop and apply numeracy knowledge and skills to gather, analyse, interpret and present information in numerical and graphical form, draw conclusions and make recommendations. They identify patterns and relationships in data and use these to identify trends in consumer choices, food innovation and food production practices. Students use numerical skills to calculate and estimate quantities and costings, and measure and record throughout the process of developing food products and production processes.

Information and communication technology capability

Students develop information and communication technology (ICT) capability as they learn to use and apply ICT effectively and appropriately to access, create and communicate information and ideas, solve problems and work collaboratively. They develop the knowledge and skills to use digital technologies to locate, organise, analyse, represent and present information to create prototypes, and control and monitor processes. Students develop design ideas, generate production plans and communicate solutions when producing safe, quality food.

Critical and creative thinking

Students develop capability in critical and creative thinking as they learn to generate and evaluate knowledge, clarify concepts and ideas, seek possibilities, consider alternatives and solve problems. They learn how to critically evaluate evidence, explore alternatives and share ideas by engaging in innovative practices in the provision of food products and food services for consumers.

Personal and social capability

Students develop personal and social capability as they learn to understand themselves and others, manage their relationships, appreciate their own strengths and abilities and develop a range of self-management and interpersonal skills. Students learn to work collaboratively and use management strategies that recognise strengths, promote negotiation, enhance leadership, personal and social resilience and encourage effective relationships within the workspace and in project management roles.

Ethical understanding

Students develop ethical understanding as they identify and investigate the nature of ethical concepts, values and principles, and understand how reasoning can assist ethical judgement. They learn the importance of treating others with integrity, compassion and respect, value diversity and reflect on ethical principles of food choices considering animal welfare, fair trade and resource use. Students are encouraged to develop informed values and attitudes.

Intercultural understanding

Students develop intercultural understanding as they learn about, and engage with, diverse cultures in ways that recognise commonalities and differences, and cultivate mutual respect, particularly when making food decisions. They develop an understanding of how culture shapes personal and social perspectives, and appreciate differences in beliefs and perspectives that may cause tension between individuals and groups. Students develop strategies to maintain and foster cultural diversity in the preparation, processing, storage, and presentation of food and during food service.

Representation of the cross-curriculum priorities

The cross-curriculum priorities address the contemporary issues which students face in a globalised world. Teachers may find opportunities to incorporate the priorities into the teaching and learning program for the Food Science and Technology ATAR course. The cross-curriculum priorities are not assessed unless they are identified within the specified unit content.

Aboriginal and Torres Strait Islander histories and cultures

This course provides an opportunity for students to learn about, and appreciate, Aboriginal and Torres Strait Islander histories and cultures through similarities and differences in food sources, preparation methods and environmental practices. Students may explore a range of practices and strategies used within different communities to manage, maintain and promote healthy lifestyles and wellbeing of all members and ensure the sustainability of food sources from one season to the next.

Asia and Australia's engagement with Asia

This course provides an opportunity to learn about the uniqueness and diversity of social structures and systems, ethnic backgrounds, cultures and food choices in communities within the Asia region. An understanding of Asia underpins the capacity of Australian students to be active and informed citizens, working together to build harmonious local, regional and global communities. Students reflect on traditional, contemporary and emerging technological achievements in the supply, processing and development of varieties of fresh produce and influences on food choices, such as culture, traditions, lifestyle and ethical issues; all of which impact on Asia and Australia's engagement with Asia.

Sustainability

This course provides an opportunity for students to learn how changes in Australian and global demographics, trends in life expectancy, the diversity and nature of society, technological advances and social, economic and environmental factors are related to sustainable development and supply of safe, fresh food. The sustainability priority provides insights into future generations and promotes sustainable farming and processing practices to meet the needs of the present population, without compromising the ability of future generations to meet their food needs. Students evaluate the extent to which the process of supplying food embraces sustainability. They reflect on past and current farming and processing practices and assess new and emerging technologies from a sustainability perspective.

Unit 1 – Food science

Unit description

In this unit, students explore how sensory, physical and chemical properties influence the selection, use and consumption of raw and processed foods. Using scientific methods, they examine the functional properties, which determine the performance of food. Students explore societal and economic issues and lifestyles that influence food choices.

Students examine primary and secondary food processes that affect nutrition, food quality and supply. They research the effect of under-consumption and over-consumption of nutrients on health and investigate a range of diet-related health conditions that affect individuals and families.

Students develop their expertise with technology and communication skills to implement strategies to design food products, services or processing systems. They select resources to meet performance requirements and use evaluation strategies to monitor and maintain optimum standards. Students follow occupational safety and health requirements and safe food handling practices. They use a variety of foods and processes to produce and evaluate food products, services or systems.

Unit content

This unit includes the knowledge, understandings and skills described below.

Nature of food

Food as a commodity

- primary and secondary processes used to convert raw commodities into safe, quality food products
- effect of seasonal conditions on the quality, supply and price of food commodities
- reasons for the development and use of varieties of food commodities
 - alter sensory and physical properties
 - alter nutritional content
 - improve yield
 - new technologies in food processing
 - line extensions
 - profit

Properties of food

- influence of sensory properties on the selection, use and consumption of raw and processed food
 - appearance
 - texture
 - aroma
 - flavour
 - sound

- influence of physical properties on the selection, use and consumption of raw and processed food
 - size
 - shape
 - colour
 - volume
 - viscosity
 - elasticity
- functional properties that determine the performance of food
 - dextrinisation
 - caramelisation
 - crystallisation
 - emulsification
 - gelatinisation
 - oxidation
 - denaturation
 - coagulation
 - leavening
 - aeration
 - rancidity

Nutrition

- food sources and role of macronutrients and water in the body
 - protein – complete and incomplete
 - carbohydrates – starches, sugars, and fibre or cellulose
 - lipids – saturated fats and oils, and unsaturated fats and oils
- food sources and role of micronutrients in the body
 - fat-soluble vitamins – A and D
 - water-soluble vitamins – B1 (thiamine), B2 (riboflavin), B3 (niacin) and C
 - minerals – calcium, iron and sodium
- effects of under-consumption of nutrients on health
 - anaemia
 - osteoporosis
 - malnutrition
 - constipation
- effects of over-consumption of nutrients on health
 - obesity
 - cardiovascular disease
 - Type 2 diabetes

Processing food

Food products and processing systems

- investigate wet processing techniques and dry processing techniques
 - suitable food commodities
 - effect on nutrition
 - heat transfer
 - sensory properties
 - cost
- devise food products
 - interpret and adapt recipes
 - devise food orders
 - develop and trial recipes
 - devise production plans
 - apply preparation and processing techniques
 - cost recipes
- the technology process to produce a food product that demonstrates a wet processing technique and a dry processing technique based on a product proposal
 - investigate
 - devise
 - produce
 - evaluate
- evaluate the food product
 - product's compliance with the proposal
 - product's sensory properties
 - selection of processing techniques
 - selection of equipment and resources
 - time requirements

Food in society

Food issues

- societal influences on food choices
 - lifestyle
 - culture and traditions
 - peer group
 - media
 - advertising
 - marketing
- economic influences on food choices
 - competition in the marketplace
 - product availability
 - consumer resources

- use of celebrities, media practices (including music, body image, colour, fonts and graphics) and food styling techniques to market food products

Laws and regulatory codes

- role of *Food Standards Australia New Zealand (FSANZ)*
- *Australia New Zealand Food Standards Code* for food labelling requirements
 - nutrition information panel
 - percentage labelling
 - name or description of the food
 - food recall information
 - information for allergy sufferers
 - date marking
 - ingredients list
 - country of origin
 - barcode
 - weights and measures
 - use and storage information
 - mandatory warnings and information
 - genetically modified content
 - legibility
- categories of food exempt from food labelling laws
- objectives of the *Food Act 2008 (WA)*
- purpose of the *Occupational Safety and Health Act 1984*

Unit 2 – The undercover story

Unit description

This unit focuses on food spoilage and contamination and explores reasons for preserving food. Students investigate food processing techniques and preservation principles. They consider the laws and regulations that determine the way food is safely preserved, packaged, labelled and stored.

Students learn how the principles of the Hazard Analysis Critical Control Point (HACCP) system are implemented to produce and provide safe food. They investigate the food supply chain, natural and processed functional foods and value-adding techniques that are applied to food to meet producer and consumer requirements. Students examine cultural traditions, beliefs and values, location, economic and media influences on the nutritional wellbeing of individuals that arise from lifestyle and food choices.

Students apply their knowledge of the technology process to meet design specifications, including legal requirements and devise food orders, production plans, and produce safe, palatable, quality food. Students implement the principles of dietary planning, use food models, and adapt recipes and processing techniques when considering specific nutritional needs of demographic groups.

Unit content

This unit builds on the content covered in Unit 1.

This unit includes the knowledge, understandings and skills described below.

Nature of food

Food as a commodity

- the food supply chain
 - production
 - processing
 - packaging
 - storage
 - distribution of food commodities
- the concept of value-adding to food
 - changes to nutritional content
 - additional processing of food
 - presentation and service
 - packaging
- define and classify functional foods
 - natural functional foods
 - processed functional foods – modified, fortified

Properties of food

- reasons for preserving food
 - extend shelf life
 - preserve nutritional value
 - out of season availability
 - palatability
 - convenience
 - economics
 - reduce waste
- causes of food spoilage and contamination
 - environmental factors, such as oxygen, light, heat, water, infestation
 - enzymatic activity on food
 - microbial contamination of food, such as mould, yeast, bacteria
- principles of food preservation
 - control of temperature, such as pasteurisation, ultra-high temperature treatment, freezing, and canning or bottling
 - anaerobic breakdown of organic substances or nutrients, such as fermentation
 - addition of chemicals, such as salt, sugar, acid and artificial preservative
 - removal of moisture through dehydration and evaporation
 - removal of oxygen through vacuum packing

Nutrition

- dietary planning
 - *Healthy Eating Pyramid (Nutrition Australia May 2015)*
 - *Australian Guide to Healthy Eating*
 - *Australian Dietary Guidelines*
- nutritional needs of demographic groups, such as adolescents and adults
- modification and fortification of foods by altering nutrient content
- influences on the nutritional wellbeing of individuals
 - lifestyle
 - cultural traditions
 - beliefs and values
 - economic circumstances
 - location
 - media

Processing food

Food products and processing systems

- food processing techniques used to control the performance of food
 - application of heat
 - application of cold
 - exposure to air

- addition of acid
- addition of alkali
- manipulation
- devise food products
 - interpret and adapt recipes
 - devise food orders
 - develop, produce and evaluate prototypes
 - devise production plans
 - apply preparation and processing techniques
 - cost recipes
- the technology process to produce a preserved food product based on a product proposal
 - investigate
 - devise
 - produce
 - evaluate
- analysis of the preserved food product
 - product's compliance with the proposal
 - product's use in another food product
 - product's sensory properties
 - selection of processing techniques
 - selection of equipment and resources
 - time requirements

Food in society

Food issues

- influence of lifestyle choices, market demands and the impact of new technologies in developing innovative food products
- factors that influence food choices
 - location
 - income
 - supply and demand
 - environmental issues
 - advertising and marketing
 - ethical issues, such as animal welfare, fair trade, resource use, country of origin
- sponsorship, tokens and free gifts, and supersizing techniques used to market food products

Laws and regulatory codes

- *Australia New Zealand Food Standards Code* labelling requirement for health claims and for mandatory fortification of food
- principles of the HACCP system
 - conduct a hazard analysis
 - identify critical control points
 - establish critical limits for each critical control point

- establish critical control point monitoring requirements
- establish corrective actions
- verify procedures
- establish record keeping procedures
- regulation of food safety in Australia
 - national authorities
 - state authorities
 - local authorities
- *Occupational Safety and Health Act 1984* and rights and responsibilities of employers and employees in food environments

School-based assessment

The Western Australian Certificate of Education (WACE) Manual contains essential information on principles, policies and procedures for school-based assessment that needs to be read in conjunction with this syllabus.

Teachers design school-based assessment tasks to meet the needs of students. The table below provides details of the assessment types for the Food Science and Technology ATAR Year 11 syllabus and the weighting for each assessment type.

Assessment table – Year 11

Type of assessment	Weighting
<p>Investigation</p> <p>Directed research in which students plan, conduct and communicate an investigation of an issue related to Food Science and Technology. They apply processes to food-related practices, use a variety of investigative approaches to individually and/or collaboratively collect and interpret primary sources and produce secondary sources. Processes include testing, analysing, evaluating and communicating findings. The investigation can be presented as a written report or a multimedia presentation.</p> <p>Other evidence can include: practical investigations, investigation plans, self or peer evaluations and/or journal reflections.</p>	30%
<p>Production analysis</p> <p>A production project in which students explore ideas, design products and/or implement production processes.</p> <p>Students manage a range of production processes, evaluating and modifying them as necessary. This includes making products, prototypes or implementing processes and systems in response to a proposal and evaluating design ideas while managing a range of production processes.</p> <p>Evidence can include: analysis of survey results, design ideas, recipes, nutritional values, sensory properties, food products, production plans, production processes, and/or food systems; modifications used to manage quality control, product test results, evaluation tools (target market group) and/or journal reflections.</p>	20%
<p>Response</p> <p>Students respond to questions which can require them to refer to stimuli or prompts, such as production practices, case studies, scenarios and primary and secondary sources.</p> <p>Tasks can be conducted inside or outside class time. Students apply their understandings and skills to analyse, and/or interpret information, solve problems and/or answer questions. Formats can include short and extended written responses and/or oral presentations.</p> <p>Other evidence can include: situation analysis exercises, observation records and checklists, journal entries and/or self, peer or target group evaluations.</p>	20%
<p>Examination</p> <p>Typically conducted at the end of each semester and/or unit. In preparation for Unit 3 and Unit 4, the examination should reflect the examination design brief included in the ATAR Year 12 syllabus for this course.</p>	30%

Teachers are required to use the assessment table to develop an assessment outline for the pair of units (or for a single unit where only one is being studied).

The assessment outline must:

- include a set of assessment tasks
- include a general description of each task
- indicate the unit content to be assessed

- indicate a weighting for each task and each assessment type
- include the approximate timing of each task (for example, the week the task is conducted, or the issue and submission dates for an extended task).

In the assessment outline for the pair of units, each assessment type must be included at least twice. In the assessment outline where a single unit is being studied, each assessment type must be included at least once. At least two response tasks should be completed in class under test conditions.

The set of assessment tasks must provide a representative sampling of the content for Unit 1 and Unit 2.

Assessment tasks not administered under test/controlled conditions require appropriate validation/authentication processes. For example, student performance for a production could be validated by a task (such as a structured essay, extended answer or analysis of the processes used in the production) which is completed in class after the final production process is completed.

Grading

Schools report student achievement in terms of the following grades:

Grade	Interpretation
A	Excellent achievement
B	High achievement
C	Satisfactory achievement
D	Limited achievement
E	Very low achievement

The teacher prepares a ranked list and assigns the student a grade for the pair of units (or for a unit where only one unit is being studied). The grade is based on the student's overall performance as judged by reference to a set of pre-determined standards. These standards are defined by grade descriptions and annotated work samples. The grade descriptions for the Food Science and Technology ATAR Year 11 syllabus are provided in Appendix 1. They can also be accessed, together with annotated work samples, through the Guide to Grades link on the course page of the Authority website at www.scsa.wa.edu.au

To be assigned a grade, a student must have had the opportunity to complete the education program, including the assessment program (unless the school accepts that there are exceptional and justifiable circumstances).

Refer to the WACE Manual for further information about the use of a ranked list in the process of assigning grades.

Appendix 1 – Grade descriptions **Year 11**

A	<p>Investigation</p> <p>Clearly defines a food-related issue.</p> <p>Gathers, organises and uses accurate information and data from a range of reliable and relevant sources to validate various points of view.</p> <p>Makes valid comparisons, informed decisions, logical recommendations and substantiated conclusions.</p> <p>Comprehensively explains ideas and points of view, with realistic alternative and appropriate recommendations for a range of food-related issues.</p> <p>Develops explanations which are organised and logical, and use a variety of formats.</p> <p>Applies concise food science terminology, supported by relevant examples.</p>
	<p>Production analysis</p> <p>Examines, in detail, the use of time, equipment and resources, and validates suitable alternative preparation and processing techniques when required.</p> <p>Provides detailed analysis of the influence of food processing techniques on sensory and physical properties for a variety of food products.</p> <p>Provides comprehensive analysis for the choice of food and selection of food processing techniques, and justifies the compliance of the food produced for the product proposal.</p>
	<p>Response</p> <p>Provides accurate and detailed explanations for a range of health issues that arise from food and lifestyle choices, supported by relevant examples.</p> <p>Provides well-developed and accurate responses, referring to appropriate, reliable information to justify points of view.</p> <p>Uses reliable evidence to make valid choices and substantiated conclusions.</p> <p>Responds to food-related issues in logical and detailed ways, applying concise food science terminology.</p>
B	<p>Investigation</p> <p>Defines a food-related issue.</p> <p>Gathers, organises and uses information and data from reliable and relevant sources to describe various points of view.</p> <p>Makes comparisons, informed decisions, recommendations, and mostly valid conclusions.</p> <p>Explains ideas and points of view, with appropriate recommendations for food-related issues.</p> <p>Develops explanations which are organised and use suitable formats.</p> <p>Uses appropriate food science terminology and relevant examples.</p>
	<p>Production analysis</p> <p>Explains the use of time, equipment and resources, and describes alternative preparation and processing techniques when required.</p> <p>Provides explanations of the influence of food processing techniques on sensory and physical properties for a variety of food products.</p> <p>Provides explanations for the choice of food and selection of food processing techniques, and describes the compliance of the food produced for the product proposal.</p>
	<p>Response</p> <p>Provides accurate explanations for health issues that arise from food and lifestyle choices, with relevant examples.</p> <p>Provides developed and accurate responses, referring to reliable information to support points of view.</p> <p>Uses evidence to make mostly valid choices and draw conclusions.</p> <p>Responds to food-related issues in detail, using appropriate food science terminology.</p>

C	<p>Investigation</p> <p>Describes a food-related issue.</p> <p>Uses mostly relevant information and data to provide various points of view.</p> <p>Makes decisions, simplistic recommendations, and broad, general conclusions.</p> <p>Communicates ideas and points of view on food-related issues using some food science terminology and relevant examples.</p>
	<p>Production analysis</p> <p>Describes the use of time, equipment and resources, and notes some alternative preparation and processing techniques when required.</p> <p>Provides wide-ranging descriptions of the influence of food processing techniques on sensory and physical properties of some food products.</p> <p>Provides general descriptions for the choice of food, selection of food processing techniques and outlines compliance of the food produced for the product proposal.</p>
	<p>Response</p> <p>Describes some health issues that arise from food and lifestyle choices, with mostly relevant examples.</p> <p>Provides mostly accurate responses, using generally reliable information to support points of view and make conclusions.</p> <p>Responds to food-related issues without detail, using some food science terminology.</p>
D	<p>Investigation</p> <p>Provides a superficial and incomplete definition for a food-related issue.</p> <p>Uses minimal information or data to list ideas.</p> <p>Makes brief, unsubstantiated statements and superficial summaries.</p> <p>States ideas or opinions on food-related issues.</p> <p>Uses minimal food science terminology and simple examples.</p>
	<p>Production analysis</p> <p>Recalls the use of time, equipment and resources and gives an alternative preparation or processing technique when required.</p> <p>Gives simple statements of the effect of processing techniques on sensory or physical properties of food.</p> <p>Makes limited attempts to explain the choice of food or selection of a food processing technique.</p>
	<p>Response</p> <p>States health issues with ambiguous connections to food or lifestyle choices, with or without simple examples.</p> <p>Provides brief responses and states a point of view, often with unsubstantiated claims.</p> <p>Responds to food-related issues in brief, disorganised ways and with frequent errors, using minimal food science terminology.</p>
E	<p>Does not meet the requirements of a D grade and/or has completed insufficient assessment tasks to be assigned a higher grade.</p>