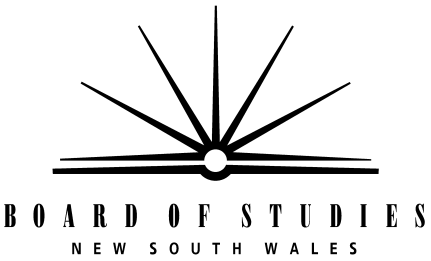

Food Technology
Years 7–10

Syllabus

June 2003

Published by
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Sydney NSW 2001
Australia

Tel: (02) 9367 8111
Fax: (02) 9367 8484
Internet: http://www.boardofstudies.nsw.edu.au

June 2003

ISBN 1 7409 9279 2

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Contents

1 Introduction

1.1 The K–10 Curriculum

This syllabus has been developed within the parameters set by the Board of Studies NSW in its *K–10 Curriculum Framework.* This framework ensures that K–10 syllabuses and curriculum requirements are designed to provide educational opportunities that:

- engage and challenge all students to maximise their individual talents and capabilities for lifelong learning
- enable all students to develop positive self-concepts and their capacity to establish and maintain safe, healthy and rewarding lives
- prepare all students for effective and responsible participation in their society, taking account of moral, ethical and spiritual considerations
- encourage and enable all students to enjoy learning, and to be self-motivated, reflective, competent learners who will be able to take part in further study, work or training
- promote a fair and just society that values diversity
- promote continuity and coherence of learning, and facilitate the transition between primary and secondary schooling.

The framework also provides a set of broad learning outcomes that summarise the knowledge, understanding, skills, values and attitudes essential for all students to succeed in and beyond their schooling. These broad learning outcomes indicate that students will:

- understand, develop and communicate ideas and information
- access, analyse, evaluate and use information from a variety of sources
- work collaboratively with others to achieve individual and collective goals
- possess the knowledge and skills necessary to maintain a safe and healthy lifestyle
- understand and appreciate the physical, biological and technological world and make responsible and informed decisions in relation to their world
- understand and appreciate social, cultural, geographical and historical contexts, and participate as active and informed citizens
- express themselves through creative activity and engage with the artistic, cultural and intellectual work of others
- understand and apply a variety of analytical and creative techniques to solve problems
- understand, interpret and apply concepts related to numerical and spatial patterns, structures and relationships
- be productive, creative and confident in the use of technology and understand the impact of technology on society
- understand the work environment and be equipped with the knowledge, understanding and skills to evaluate potential career options and pathways
- develop a system of personal values based on their understanding of moral, ethical and spiritual matters.

The ways in which learning in the *Food Technology Years 7–10 Syllabus* contributes to the curriculum and to the student's achievement of the broad learning outcomes are outlined in the syllabus rationale.

In accordance with the *K–10 Curriculum Framework*, the *Food Technology Years 7–10 Syllabus* takes into account the diverse needs of all students. It identifies essential knowledge, understanding, skills, values and attitudes. It enunciates clear standards of what students are expected to know and be able to do in Years 7–10. It provides structures and processes by

which teachers can provide continuity of study for all students, particularly to ensure successful transition through Years 5 to 8 and from Year 10 to Year 11.

The syllabus also assists students to maximise their achievement in Food Technology through the acquisition of additional knowledge, understanding, skills, values and attitudes. It contains advice to assist teachers to program learning for those students who have gone beyond achieving the outcomes through their study of the essential content.

1.2 Students with Special Education Needs

In the K–6 curriculum, students with special education needs are provided for in the following ways:

- through the inclusion of outcomes and content in syllabuses which provide for the full range of students
- through the development of additional advice and programming support for teachers to assist students to access the outcomes of the syllabus
- through the development of specific support documents for students with special education needs
- through teachers and parents planning together to ensure that syllabus outcomes and content reflect the learning needs and priorities of students.

Students with special education needs build on their achievements in K–6 as they progress through their secondary study and undertake courses to meet the requirements for the School Certificate.

It is necessary to continue focusing on the needs, interests and abilities of each student when planning a program for secondary schooling. The program will comprise the most appropriate combination of courses, outcomes and content available.

Life Skills
For most students with special education needs, the outcomes and content in sections 6 and 7 of this syllabus will be appropriate but for a small percentage of these students, particularly those with an intellectual disability, it may be determined that these outcomes and content are not appropriate. For these students the Life Skills outcomes and content in section 8 and the Life Skills assessment advice below can provide the basis for developing a relevant and meaningful program.

Access to Life Skills outcomes and content in Years 7–10
A decision to allow a student to access the Food Technology Years 7–10 Life Skills outcomes and content should include parents/carers and be based on careful consideration of the student's competencies and learning needs.

The decision should establish that the outcomes and content in sections 6 and 7 of the *Food Technology Years 7–10 Syllabus* are not appropriate to meet the needs of the student. Consideration should be given to whether modifications to programs and to teaching, including adjustments to learning activities and assessment, would enable the student to access the syllabus outcomes and content.

As part of the decision to allow a student to access the Food Technology Years 7–10 Life Skills outcomes and content, it is important to identify relevant settings, strategies and resource requirements that will assist the student in the learning process. Clear time frames and strategies for monitoring progress, relevant to the age of the student, need to be identified and collaborative plans should be made for future needs.

It is not necessary to seek permission of the Office of the Board of Studies for students to undertake the Food Technology Years 7–10 Life Skills outcomes and content, nor is it necessary to submit planning documentation.

Life Skills assessment

Each student undertaking a Food Technology Years 7–10 Life Skills course will have specified outcomes and content to be studied. The syllabus content listed for each outcome forms the basis of learning opportunities for students.

Assessment should provide opportunities for students to demonstrate achievement in relation to the outcomes and to generalise their knowledge, understanding and skills across a range of situations or environments including the school and the wider community.

Students may demonstrate achievement in relation to Food Technology Years 7–10 Life Skills outcomes independently or with support. The type of support will vary according to the particular needs of the student and the requirements of the activity. Examples of support may include:

- the provision of extra time
- physical and/or verbal assistance from others
- the provision of technological aids.

2 Rationale

The Australian food industry is growing in importance, providing numerous employment opportunities and increasing the relevance of Food Technology for the individual and society. There are increasing community concerns about food issues, including hygiene and safety, nutritional claims and the nutritional quality of food, genetic engineering, functional food and the environmental impact of food production processes. Students will explore food-related issues through a range of practical experiences, allowing them to make informed and appropriate choices with regards to food.

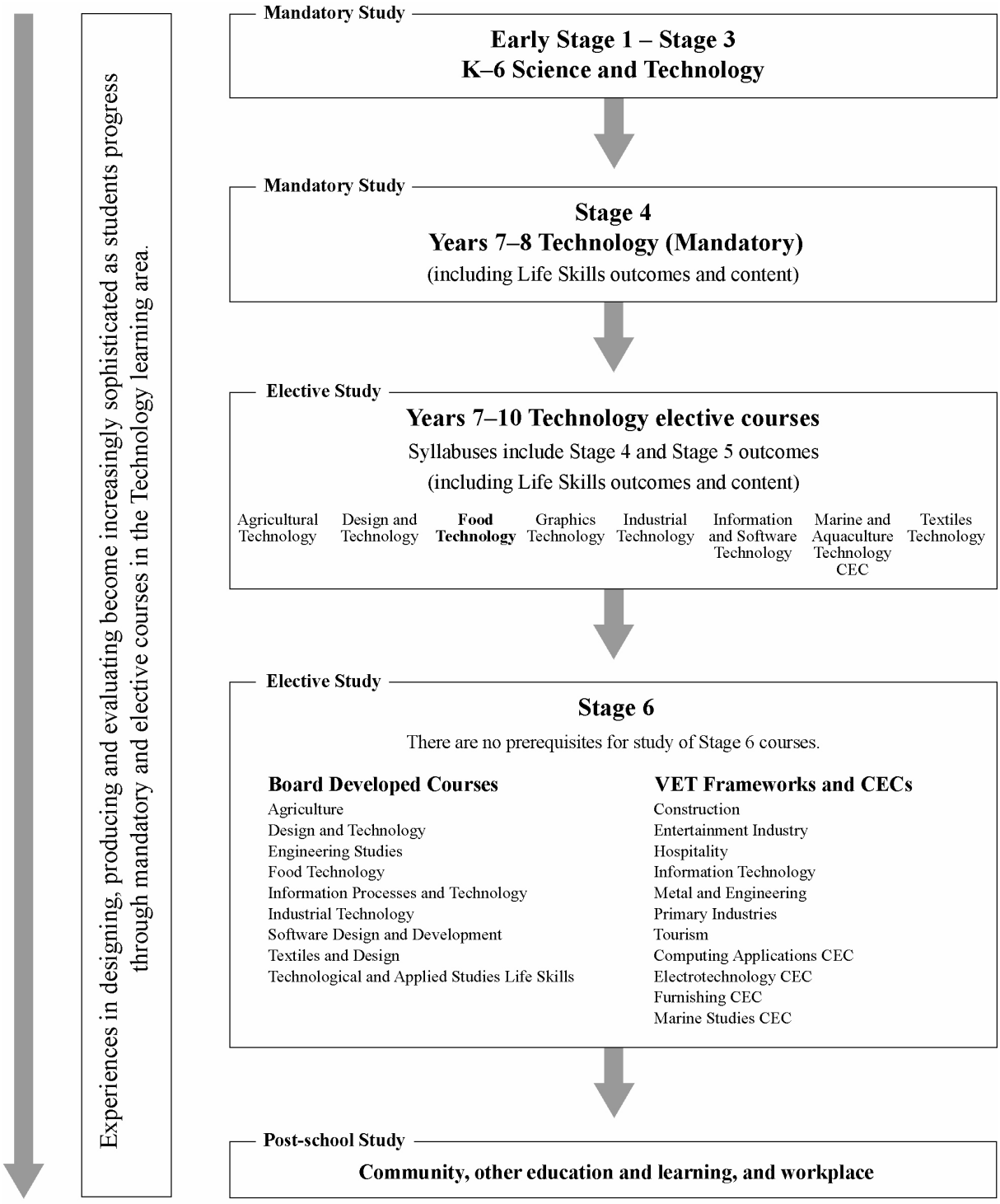
Food habits change as a result of economic, social, cultural, technological and environmental factors. In Australia, consumers are confronted by an increasing array of food products designed to complement our changing lifestyles. Making informed food decisions requires an explicit understanding of nutrition principles in both theory and practice, and this is embedded in a study of Food Technology. This is essential to the development of sound food habits and contributes significantly to the well-being of all Australians.

The study of Food Technology provides students with a broad knowledge and understanding of food properties, processing, preparation and their interrelationships, nutritional considerations and consumption patterns. It addresses the importance of hygiene and safe working practices and legislation in the production of food. It also provides students with a context through which to explore the richness, pleasure and variety food adds to life.

This knowledge and understanding is fundamental to the development of food-specific skills, which can then be applied in a range of contexts enabling students to produce quality food products. Students develop practical skills in preparing and presenting food that will enable them to select and use appropriate ingredients, methods and equipment.

This course provides for the development of relevant and meaningful learning experiences, inclusive of life experiences, values, learning styles and individual student characteristics. Through a study of food and its applications in domestic, commercial, industrial and global settings, the syllabus caters for all students' needs and interests. It contributes to both vocational and general life experiences. Integral to this syllabus is the ability to design, produce and evaluate solutions to situations involving food. These form part of a broad set of skills that are transferable to other study, work and life contexts that students may encounter.

3 The Place of the Food Technology Years 7–10 Syllabus in the Technology K–12 Curriculum



4 Aim

The aim of the *Food Technology Years 7–10 Syllabus* is to actively engage students in learning about food in a variety of settings, enabling them to evaluate the relationships between food, technology, nutritional status and the quality of life. Students will develop confidence and proficiency in their practical interactions with and decisions regarding food.

5 Objectives

Knowledge, understanding and skills
Students will develop:

1 knowledge, understanding and skills related to food hygiene, safety and the provision of quality food
2 knowledge and understanding of food properties, processing and preparation and an appreciation of their interrelationship to produce quality food
3 knowledge and understanding of nutrition and food consumption and an appreciation of the consequences of food choices on health
4 skills in researching, evaluating and communicating issues in relation to food
5 skills in designing, producing and evaluating solutions for specific food purposes
6 knowledge, understanding and appreciation of the significant role of food in society.

6 Outcomes

Objectives Students will develop:	**Stage 4 Outcomes** A student:	**Stage 5 Outcomes** A student:
1 knowledge, understanding and skills related to food hygiene, safety and the provision of quality food	4.1.1 demonstrates hygienic handling of food to ensure a safe and appealing product 4.1.2 describes and manages the risks of injury and WHS issues associated with handling food	5.1.1 demonstrates hygienic handling of food to ensure a safe and appealing product 5.1.2 identifies, assesses and manages the risks of injury and WHS issues associated with the handling of food
2 knowledge and understanding of food properties, processing and preparation and an appreciation of their interrelationship to produce quality food	4.2.1 lists the basic components of a variety of foods 4.2.2 describes changes which occur during processing, preparation and storage of food 4.2.3 applies appropriate methods of food preparation	5.2.1 describes the physical and chemical properties of a variety of foods 5.2.2 accounts for changes to the properties of food which occur during food processing, preparation and storage 5.2.3 applies appropriate methods of food processing, preparation and storage
3 knowledge and understanding of nutrition and food consumption and an appreciation of the consequences of food choices on health	4.3.1 relates the nutritional value of foods to health 4.3.2 identifies the factors that influence food habits and relates them to food choices	5.3.1 describes the relationship between food consumption, the nutritional value of foods and the health of individuals and communities 5.3.2 justifies food choices by analysing the factors that influence eating habits
4 skills in researching, evaluating and communicating issues in relation to food	4.4.1 collects, interprets and uses information from a variety of sources 4.4.2 communicates ideas and information using a range of media and appropriate terminology	5.4.1 collects, evaluates and applies information from a variety of sources 5.4.2 communicates ideas and information using a range of media and appropriate terminology
5 skills in designing, producing and evaluating solutions for specific food purposes	4.5.1 uses appropriate techniques and equipment for a variety of food-specific purposes 4.5.2 plans, prepares, presents and evaluates practical food activities	5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes 5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

Objectives Students will develop:	**Stage 4 Outcomes** A student:	**Stage 5 Outcomes** A student:
6 knowledge, understanding and appreciation of the significant role of food in society	4.6.1 outlines the influence of technology and society on food supply 4.6.2 recognises the impact of food and related activities on the individual, society and the environment	5.6.1 examines the relationship between food, technology and society 5.6.2 evaluates the impact of activities related to food on the individual, society and the environment

Stage 4 outcomes have been provided to assist the assessment and reporting of student achievement in those schools that choose to begin elective study before Year 9. Teachers are advised to select from the syllabus content to target the specific needs of students who commence study in Stage 4.

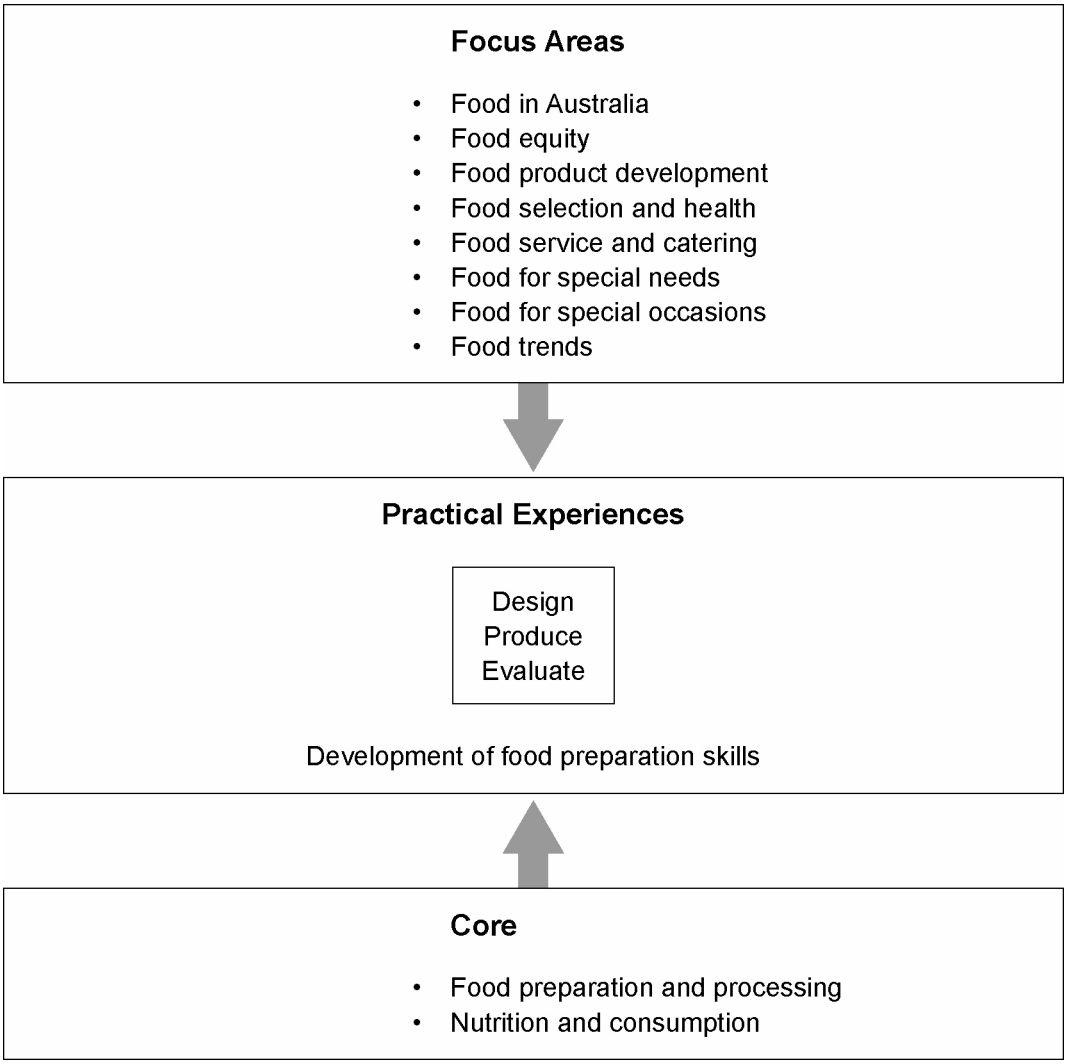
Life Skills

For some students with special education needs, particularly those students with an intellectual disability, it may be determined that the above outcomes are not appropriate. For these students, Life Skills outcomes and content can provide the basis for the development of a relevant and meaningful program – see section 8.

7 Content

7.1 Organisation of Content

Food Technology Years 7–10 is an elective course designed to build upon the Technology (Mandatory) course at Stage 5. Outcomes for Stage 4 have been included to allow flexibility for those schools who wish to offer the course in Years 7 and 8.



Units of Work
When creating a unit of work, relevant content will be selected from the core and integrated with all of the content of a selected focus area and appropriate practical experiences. During the study of each unit students will be required to undertake practical activities designed to refine and enhance student knowledge, understanding and skills. Units of work are developed to meet student needs and interests.

Essential content
Food Technology can be offered as a 100-hour or a 200-hour course. Students undertaking the 100-hour course are required to complete 2–4 units of work. Students studying the 200-hour course are required to complete 4–8 units of work. Students in both courses are required to cover all of the core content.

Additional content
Students can move beyond the essential content in order to broaden and deepen their understanding and skills, and to extend their interest in particular aspects of Food Technology. Additional content is suggested for each of the focus areas. Students completing the 200-hour course can also elect to undertake a student negotiated project, for extension of student learning, in which they will revisit one of the focus areas and research it in more detail.

Focus Areas
Focus areas provide a context through which the core will be studied. There are eight focus areas:
- Food in Australia
- Food equity
- Food product development
- Food selection and health
- Food service and catering
- Food for special needs
- Food for special occasions
- Food trends.

Life Skills
Life Skills outcomes and content are in section 8.

Cross-curriculum content
Cross-curriculum content assists students to achieve the broad learning outcomes defined in the Board of Studies *K–10 Curriculum Framework*. It is incorporated in the content of the *Food Technology Years 7–10 Syllabus* in the following ways:

Information and Communication Technologies (ICT)
Students will engage a variety of ICTs through activities such as researching, evaluating and communicating issues and ideas related to food.
ICTs that students will use include:
- word processing applications – in the core 'food preparation and processing' students will use word processing packages to generate and manipulate procedural text
- spreadsheets – in the core 'nutrition and consumption' students will tabulate data and generate graphs using a spreadsheet
- graphics – in the focus area 'food trends' students who elect to undertake additional content will use digital technologies to produce a finished visual image
- electronic communication – in the core 'nutrition and consumption' and the focus area 'food service and catering' students will conduct advanced web searches using appropriate search engines
- databases – in the core 'nutrition and consumption' students will use a database accessed online or use a CD-ROM to analyse information.

Work, Employment and Enterprise

Students will develop an understanding of work and employment through the study of workplace practices within the Australian food industry. Students will explore work-related concepts in the core 'food preparation and processing' and in the focus area 'food service and catering'. Students will develop an understanding of current work practices including Work Health and Safety (WHS) requirements, safe work practices, industrial legislation, industrial awards and enterprise agreements and the Anti-Discrimination Act. Knowledge and skills gained through food handling in all practical classroom activities are transferable to personal and vocational contexts.

Aboriginal and Indigenous

Students will develop knowledge and understanding of Aboriginal and Indigenous culture through the study of the focus areas 'food in Australia' and 'food equity'. Students will learn to appreciate and value aspects of Aboriginal and Indigenous cultures through the investigation of traditional and contemporary use of native and bush foods. Students will develop an awareness of the implications of less traditional food being eaten.

Civics and Citizenship

Students will develop a sound understanding of the nutritional, social and environmental roles of food and food products. In the focus areas 'food selection and health' and 'food product development' students will develop understanding that will allow them to become discriminating consumers of food products, enabling them to participate in society in an active and informed manner. In the focus area 'food equity' students will develop their understanding of inequities in food distribution on a global scale. Students will examine how the operations of governments affect citizens and how these factors impinge on human rights in relation to access to resources domestically and internationally.

Difference and Diversity

Students will examine socioeconomic, cultural and religious issues related to food. In the focus areas 'food in Australia', 'food for special occasions' and 'food for special needs' students will explore the manner in which food is used by individuals and groups within the community. Students will develop an awareness of the positive and negative impact of food-related issues on diverse groups. This knowledge will enable students to develop an awareness and acceptance of diversity within our community.

Environment

Students will develop an understanding of the ecological impact of food production, packaging and processing, and the various ways in which environments influence access to and choice of food through the study of the core 'food preparation and processing', and the focus areas 'food in Australia', 'food product development' and 'food equity'. This will enable them to make informed decisions with regard to food and the environment.

Gender

Food Technology involves students in practical situations that support the development of knowledge, skills and understanding to explore and challenge stereotypes of masculinity and femininity. Positive relationships are developed through effective interpersonal communication and respect for the contributions, needs and efforts of others. It is inclusive of the needs, interests and aspirations of all students. In the study of the core 'nutrition and consumption', students will have the opportunity to explore the special nutritional requirements of both men and women. In the study of the focus area 'food service and catering', students will develop an awareness of EEO principles and Anti-Discrimination legislation with regard to gender in employment.

Key Competencies

Food Technology provides a context within which to develop general competencies essential for students to become effective learners and make a positive contribution to their community.

During the course, students will:

- source, select and sequence information about food issues, developing competence in ***collecting, analysing and organising information***
- debate, describe, discuss and explain food issues in written, graphic and oral form, developing competency in ***communicating ideas and information***
- plan, prepare and present food and meals to meet a range of needs, developing competence in ***planning and organising activities***
- cooperate with individuals and groups developing competence in ***working with others and teams***
- design, make and evaluate solutions to food situations, developing competence in ***solving problems***
- evaluate the nutritional requirements and assess the nutritional value of meals/diets and food products for individuals and groups, and utilise measurement skills in practical activities, developing competence in ***using mathematical ideas and techniques***
- experiment with and prepare food using appropriate materials and equipment, developing competence in ***using technology***.

Literacy

Throughout the study of Food Technology students will develop literacy skills in reading, writing, speaking and listening. Students will learn to use a technical vocabulary specific to Food Technology. They will engage with information critically and will acquire, compose, process and evaluate text and communicate ideas in oral, graphic and written forms throughout the course.

Multicultural

In the study of the focus areas 'food in Australia' and 'food equity' students will explore a number of multicultural perspectives concerning food. Students will enhance their understanding, appreciation and acceptance of people from a variety of cultural backgrounds. In the focus area 'food for special occasions', students will examine various cultures and the way in which they celebrate occasions with food.

Numeracy

Numeracy skills are integral to the effective use of food through concepts such as quantity, measurement, and costing, which are significant parts of practical work and nutritional analysis. Numeracy skills are transferable to solving problems that are encountered across a range of contexts.

7.2 Content for Years 7–10

A note to teachers about practical experiences
To satisfy the requirements of the syllabus students must undertake a range of practical experiences that occupy the majority of course time. Practical experiences will be used to develop knowledge and understanding of and skills in designing, producing and evaluating. Student capability, confidence and expertise at their current stage of development is an important consideration in determining the teaching and learning sequences in the course.

In developing and delivering teaching programs teachers should be aware of and adopt the relevant guidelines and directives of their education authorities and/or schools. Teaching programs should recognise and reflect relevant State and Commonwealth legislation and conventions including Work Health and Safety, Chemical Safety in Schools and Animal Welfare guidelines. Teachers need to be aware of activities that may require notification, certification, permission, permits and licences.

Teachers should be aware that students may have food allergies that can result in anaphylaxis, a severe and sometimes sudden allergic reaction which is potentially life-threatening and always requires an emergency response. This is an important consideration in selecting foods to be handled and consumed.

Core: Food preparation and processing
Food is processed to varying degrees. Students will explore safety and hygiene practices relating to food, and changes that occur in the functional properties of food. They will also examine the social, economic and environmental impact of food processing technology, and the role packaging plays in the distribution of food from the point of production to consumption.

Outcomes

A student:

5.1.1 demonstrates hygienic handling of food to ensure a safe and appealing product

5.1.2 identifies, assesses and manages the risks of injury and WHS issues associated with the handling of food

5.2.1 describes the physical and chemical properties of a variety of foods

5.2.2 accounts for changes to the properties of food which occur during food processing, preparation and storage

5.2.3 applies appropriate methods of food processing, preparation and storage

5.6.2 evaluates the impact of activities related to food on the individual, society and the environment

Students learn about:	**Students learn to:**
• food safety and hygiene practices including – personal hygiene – food hygiene – safe work practices	• demonstrate safe, cooperative and hygienic work practices • assess food handling requirements for a variety of situations • describe legislation specifically linked to food safety
• causes of food deterioration and spoilage – microbial activity – enzymic changes – physical and chemical reactions – environmental factors	• outline the causes of food deterioration and spoilage • identify ingredients that pose a high risk for food deterioration and spoilage • describe techniques and methods that make food products less prone to deterioration and spoilage
• principles of food preservation and storage – moisture levels – addition of chemicals – temperature – pH level – oxygen	• explain the principles of food preservation • describe a range of methods used to preserve and store foods safely • apply the principles of food preservation and storage when producing food products

Students learn about:	**Students learn to:**
• reasons for cooking foods – sensory properties including colour, odour, texture, flavour	• discuss the reasons why basic ingredients need to be cooked for consumption • appreciate the role food components play on the sensory qualities of foods
• properties of food – functional properties of carbohydrates, proteins and lipids	• examine the functional properties of a variety of foods • prepare food products that demonstrate the functional properties of ingredients (eg starch as a thickener, egg yolk as an emulsifier) • identify the properties of foods that make them suitable for particular preparation techniques/cooking methods
• basic ingredients used in food preparation including – protein rich foods – carbohydrate rich food – fruit and vegetables – fats and oils – herbs – spices	• create food items using combinations of basic ingredients • explain how different cuisines are created by varying basic ingredients and techniques • generate procedural text to outline the steps in processing and preparing food products using a word processing package
• methods and equipment used in the preparation and processing of food	• demonstrate appropriate selection of techniques and equipment in food preparation
• the role of technology in the preparation of food domestically and the social implications	• discuss social implications of technological developments in domestic food preparation equipment
• physical and nutritive effects of preparation and processing in domestic and industrial setting	• explain how various methods of food processing and preparation affect the physical characteristics of food • outline ways in which nutritive loss can be minimised during preparation and processing
• industrial food preparation – levels of processing – additives – environmental, social, health and economic effects	• identify the varying levels of processing and the accompanying changes that occur to food • identify the role of additives in food processing • discuss the environmental, social, health and economic implications of food processing
• presentation and service of food – visual appeal – garnishes – styles of service such as buffet, a la carte and silver service	• select and apply appropriate presentation techniques and styles of service for various occasions
• food packaging – forms/materials – functions – technological developments such as barrier, active, vacuum and gas – environmental impact – labelling/legal requirements	• outline the functions of packaging, including the persuasive purpose of food packaging • suggest suitable packaging for a variety of food types in different circumstances • identify food labelling requirements • ethical considerations in declaration of ingredients

Core: Nutrition and consumption

Knowledge of nutrition is integral to making healthy food choices. Students will examine the nutritional components of food and food developments aimed at enhancing health, the impact of food consumption on nutrition and explore ways of meeting nutritional requirements to maintain optimum nutrition or manage nutritional issues.

Outcomes

A student:

5.3.1 describes the relationship between food consumption, the nutritional value of foods and the health of individuals and communities

5.4.1 collects, evaluates and applies information from a variety of sources

5.4.2 communicates ideas and information using a range of media and appropriate terminology

5.6.2 evaluates the impact of activities related to food on the individual, society and the environment

Students learn about:	**Students learn to:**
• nutritional components of food – food nutrient groups – proteins – carbohydrates – lipids – vitamins – minerals – water	• explain the role of the nutritional components of food in the body
• the role of fibre in the diet	• describe the significant role of fibre in the diet
• foods which are developed to enhance health including – probiotics – functional foods	• discuss the role of nutritionally modified foods in the diet • discuss current developments in the nutritional modification of food
• implications of under and over nutrition and diet-related disorders such as – diabetes type 2 – coeliac disease – obesity – anaemia – osteoporosis – coronary heart disease – hypertension – colon cancer	• outline conditions of over and under nutrition with reference to at least two diet-related disorders • explore the incidence of and reasons for eating disorders in women and men
• anorexia and restrained eating	• describe the nature of anorexia and how it compares with other forms of disordered eating
• food consumption in Australia and the impact this has on nutrient intake and health	• relate the impact of changes in food consumption patterns to health
• influences on food selection and the subsequent effects on health	• outline how diet can assist in preventing and managing dietary disorders • identify dietary strategies that would be adopted by individuals with food allergies
• national guidelines for healthy eating including the National Dietary Guidelines for children and adolescents	• identify broad guidelines for healthy eating to promote optimal health and prevent disease

Students learn about:	**Students learn to:**
• nutrition labelling – health claims – legal requirements – labelling symbols such as Glycaemic Index and Healthy Heart tick	• analyse the nutritive content of food using electronic databases either online or by using a CD-ROM • discuss the value to the consumer of endorsed labelling symbols
• nutritional requirements of different stages of the lifecycle – pregnancy – lactation – infancy – childhood – adolescence – adulthood – aged	• outline the special nutritional requirements at different stages of the lifecycle for both females and males
• selection of nutritious foods	• design, plan and prepare balanced diets for various stages of the lifecycle
• changes in consumption patterns in relation to processed and unprocessed food	• conduct an advanced web search using appropriate search engines to identify trends in food consumption • tabulate data using a spreadsheet and generate graphs for analysis

Focus area: Food in Australia

Migration has had a dramatic effect on the food eaten in Australia. Students will examine the history of food in Australia, beginning with traditional bush foods prepared by Aborigines, the influence of early European settlers together with continuing immigration from a variety of cultures, and examine the subsequent effects on contemporary Australian eating patterns. Students will plan and prepare safe foods, which reflect the eclectic nature of Australian cuisine.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• use of foods native to Australia	• investigate traditional and contemporary use of native/bush foods • modify a recipe to include traditional ingredients/bush foods
• early European influences including – diet of early Europeans – introduction of new foods to Australia	• discuss the impacts of early European influences (impact of migration on food habits) • consider the nutritional implications to indigenous Australians of less traditional food being eaten as a consequence of European settlement
• multicultural influences including – effects of immigration on lifestyle and food habits – types of foods and flavourings – preparation techniques and cooking methods	• identify the major multicultural influences on contemporary Australian diets • investigate/examine the food habits of a specific culture
• evolution of an Australian cuisine	• discuss the defining characteristics of Australian food • design, plan and prepare safe food items, which reflect the changing nature of Australian cuisine
• influences on food selection including – physiological – psychological – geographical (topography/climate) – social – economic – technological – religious – media/advertising	• examine the influences on food selection and changes in eating habits • assess the relative impact of current circumstances on food selection • examine the impact of media on food selection

Students learn about:	**Students learn to:**
• factors affecting current consumption patterns including – social – economic – nutritional – environmental	• relate changes in consumption patterns to their social, economic, nutritional and environmental impact

Additional content	
Students learn about:	**Students learn to:**
• development of food production and processing from both historical and contemporary perspectives	• investigate the development of the Australian food industry in consideration of food-related technologies that have emerged over time

Focus area: Food equity

Access to an adequate food supply is a global issue. Students examine food production and distribution globally and how this is influenced by factors such as transport, infrastructure, political environment and geographic considerations. Students plan and prepare safe and nutritious foods appropriate to specific situations.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• circumstances that bring about food inequity including – access to a continuous and safe supply of water – availability of safe and nutritious food – financial means to meet food needs – knowledge of nutrition principles to enable appropriate selection of food – distribution issues	• explain the circumstances that relate to food inequities
• groups that may experience food inequity in developed and developing countries such as – rural and isolated people – people on low incomes or unemployed – women and children – people with disabilities – the aged/elderly – Aboriginal and indigenous people – chronically ill people – people with dementia – alcohol and drug abusers – homeless people	• identify groups at risk of food inequity locally and globally • discuss how belonging to more than one risk group can compound nutritional disadvantage

Students learn about:	**Students learn to:**
• influences on food availability and distribution such as – geography/climate – religious/cultural beliefs – socioeconomic status – government policy such as trade restrictions – natural disasters such as flooding or drought – war – educational levels – multinationals – technological developments such as transport and refrigeration	• relate the factors that influence food availability and distribution to food equity • compare and contrast access to food by different groups
• food production practices – cash cropping, subsistence farming	• examine food production and distribution on a global scale
• physical and social cost of malnutrition	• explain the consequences of malnutrition • identify dietary diseases associated with malnutrition
• provision of aid – aid agencies – emergency/relief aid – developmental aid, eg promoting breast feeding, developing agricultural skills	• identify the role of agencies which provide aid • design, plan and prepare safe and nutritious food items appropriate to specific situations

Additional content	
Students learn about:	**Students learn to:**
• support networks for groups that may experience food inequities including – government – voluntary	• examine a group that experiences food inequity and investigate available support networks and the support provided

Focus area: Food product development

An ever increasing array of food products is available in the marketplace as a result of food product innovations. Students will examine the reasons for developing food products and the impact of past and present food product innovations on society and explore the processes in food product development. Students will develop, produce and evaluate a food product.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• reasons for developing food products including – market concerns, eg health concerns, environmental issues – technological developments, eg packaging – increasing company success, eg line enhancements, innovative products – consumer demand, eg tamper-evident, increasing convenience – special applications, eg army rations, camping supplies, space foods, medical – target market changes, eg aging, reduced size of households, multicultural	• explore the purpose of product development • identify new food products • examine the characteristics of new food products
• impact of past and present food product innovations on society including – social/cultural, eg acceptance, lifestyle – economic, eg increase in spending on new products versus decrease in traditional purchases, cost of new products – environmental, eg sustainable resources – nutritional	• relate the introduction of new food products and their effect on society
• steps in food product development including – design, eg identify market, develop ideas, assess options – produce, eg recipe development, prototype production – evaluate, eg market evaluation – sensory assessment by target market	• outline the design and development process for food products • design, produce and evaluate a food product

Students learn about:	**Students learn to:**
• role of market research in product development including – identifying needs – economic viability – consumer feedback – sensory assessment	• outline the role of market research in new food product design and development
• promotion of new food products including – marketing mix – promotional techniques – competitions, advertising campaigns, celebrity endorsements	• identify the elements of a marketing mix • analyse the effectiveness of a range of marketing and promotional techniques for new food products • promote a new food product for a specific market

Additional content	
Students learn about:	**Students learn to:**
• emerging technologies and new food products	• investigate the application of an emerging technology in the development of a new food product • design an innovative, new-to-the-world food product

Focus area: Food selection and health

The health of communities is related to the nutritional content of the food eaten. Students will examine the role of food and its nutritional components in the body, explore the nutritional needs of individuals and groups, explain the effects of poor nutrition and investigate means of improving the nutritional status of individuals and groups. Students will select, plan and prepare safe and nutritious foods to reflect national food guides.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• function of food in the body – growth and development – provide energy – repair and maintain the body's cells	• outline the functions of food in the body
• digestion of food – gastro-intestinal tract – process of digestion – absorption of nutrients – metabolism	• describe the process of digestion
• function and sources of food components including – proteins – carbohydrates/fibre – lipids – vitamins and minerals	• outline the source and function of the components of food
• nutritional needs including – factors that affect nutritional needs – Recommended Dietary Intakes (RDIs) for various life stages	• identify RDIs of major nutrients at various life stages • select foods to provide a balanced intake of nutrients • design and prepare a menu/meal/dish to meet the needs of specific groups
• factors that influence food habits including – social practices – religious – geographic location – economic situation – technological developments – individual preferences – mass media	• recognise the factors that influence food habits and explain how they affect food choices

Students learn about:	**Students learn to:**
• nutritional implications of food consumption patterns – under and over nutrition	• outline the effects of excess/insufficient nutrient intakes
• response to general nutrition levels including – social, political and manufacturing directions – ethical responsibilities of government and manufacturers	• discuss responses by various groups to general nutrition levels
• application of food guides for menu planning and food choices	• evaluate the usefulness of nutritional food guides • analyse the nutritional value of a menu, meal or food item • modify a menu, meal or food item to reflect food guides • design, plan and prepare safe and nutritious food items to reflect food guides

Additional content	
Students learn about:	**Students learn to:**
• active non-nutrients such as phytochemicals and probiotics	• evaluate the potential health benefits of active non-nutrients

Focus area: Food service and catering

Food service and catering are important areas of the food industry. They provide people with both food and employment. Students will examine food service and catering ventures and their operations across a variety of settings and investigate employment opportunities. Students will plan and prepare safe and appealing foods appropriate for catering for small or large scale functions.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• food service and catering ventures including – profit, eg restaurants – nonprofit, eg hospitals	• examine a variety of food service and catering operations
• the economic and social value of the food service and catering industry	• discuss the contribution of the food service and catering industry to society
• employment opportunities including – back of house, eg chef, kitchen hand – front of house, eg waiter, supervisor – management – delivery	• conduct an advanced web search using appropriate search engines to investigate employment opportunities in the hospitality industry including remuneration and full-time, part-time and casual work opportunities
• employer and employee rights and responsibilities with regard to food establishments such as – WHS Act – industrial legislation such as industry awards, enterprise agreements – anti-discrimination legislation – EEO principles	• outline the responsibilities of the employer and employee under various Acts and legislation with regard to food establishments • assess and manage risks when preparing and managing foods • demonstrate safe work practices when preparing and serving food
• consumer rights and responsibilities in relation to food including – safety and hygiene – value for money – accurate information with regard to food labelling and marketing	• outline the rights and responsibilities of consumers with regard to food

Students learn about:	**Students learn to:**
• menu planning considerations such as – scale of function – types of menus for example cyclic, a la carte – facilities, staff, time, money – time of year, time of day, occasion – health, occupation, gender, age, preferences, number of people	• compare and contrast a variety of menus from a range of catering and service operations
• recipe development including – ingredients to be used – method of preparation – quantity required for various portions – cost per portion – measuring – recipe writing	• identify the elements of a recipe • compare a recipe for a small scale production with a recipe for use in large scale catering • develop/modify a recipe for use in large scale catering
• purchasing systems – ordering, receiving, controlling, issuing	• examine organisational systems used in a service or catering operation
• food service and catering considerations such as – plating food – style of meal – number of courses – customer requirements – cost – time available	• design, plan and prepare safe and appealing food items appropriate for catering for small or large scale functions • determine an appropriate table layout or setting for a specific style of meal

Additional content	
Students learn about:	**Students learn to:**
• aspects of operating a small food business venture including – economic – legal – environmental – commercial	• create a proposal for a small food business venture using a design brief approach

Focus area: Food for special needs

Special food needs arise for a variety of reasons including age, health, lifestyle choices, cultural influences or logistical circumstances. Students will explore a range of special food needs and the means to satisfy these. Students will plan and prepare safe and nutritious foods to meet specific food needs in various circumstances.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• circumstances which lead to special food needs including	• identify the circumstances that may lead an individual to have special needs
– stages of the life cycle	• outline the special requirements for each stage of the life cycle
– health status such as - allergies and intolerances - recovery from illness/injury - diet-related disorders	• explore the impact of a variety of health needs on the food requirements of the individual
– lifestyle choices such as - athletes - vegetarians	• investigate the effects of lifestyle on food needs
– cultural influences and religious beliefs	• examine cultural influences and religious beliefs which may impact upon food needs
– logistical considerations such as bush walking, camping, hospitals, canteens, nursing homes and plane travel	• identify the logistical impacts on food needs and suggest suitable methods of meeting these logistical needs
• support networks for individuals with special needs	• examine a range of support networks available for individuals with special needs
• preparation and processing of foods for special needs such as low kilojoule, low salt, high fibre, high protein, low fat	• identify examples of foods that are processed/prepared to suit individuals with special needs
	• assess the suitability of a range of processed/prepared foods for dietary disorders
	• explore methods of processing/preparing foods in the home to suit a specific need

Students learn about:	**Students learn to:**
• planning considerations for safe and nutritious foods for special needs – menus for special needs – number of courses – customer – cost – time available	• analyse the nutritive value of a dish • identify foods that are suitable for a number of special needs • design, plan and prepare a menu/meal/dish suitable for a particular special need

Additional content	
Students learn about:	**Students learn to:**
• specific circumstances which lead to special nutritional needs	• research the circumstances of a particular group • organise a dietary plan • produce a multimedia presentation to educate members of the community

Focus area: Food for special occasions

Food is an important component of many special occasions. Students will explore a range of special occasions including social, cultural, religious, historical and family, and examine the elements of small and large scale catering. Students will plan and prepare safe food, demonstrating appropriate food handling and presentation skills.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• role and significance of food around the world throughout history	• outline the significance of food throughout history
• reasons for celebration including – social – cultural – religious – historical – family	• explore the special occasions celebrated by various groups
• production and preparation of foods for special occasions including – foods, techniques and equipment for special occasions – small and large scale catering for special occasions	• design, plan and prepare food items for special occasions
• menu planning considerations for special occasions including – nutritional value of food – appeal of the food such as colour, aroma, flavour, texture – occasion and setting – characteristics of diners including age, health, energy levels, culture, tastes, number – resources such as ingredients, equipment, skills, money, time	• plan a menu for a special occasion using products in the marketplace
• work flow plan including sequencing tasks and allocating time	• devise a work flow plan to be used when conducting a practical activity
• importance of presentation and service for special occasions including garnishing and decorating techniques	• demonstrate appropriate food handling and presentation skills for a special occasion

Additional content	
Students learn about:	**Students learn to:**
• use of pre-prepared and partly prepared convenience foods for presenting food on a special occasion	• plan, prepare and host a function to celebrate a special occasion that incorporates the use of convenience foods

Focus area: Food trends

Food trends influence food selection, food service and food presentation. Students will examine historical and current food trends and explore factors that influence their appeal and acceptability. Students will plan, prepare and present safe, appealing food that reflects contemporary food trends.

Outcomes

A student:

5.3.2 justifies food choices by analysing the factors that influence eating habits

5.5.1 selects and employs appropriate techniques and equipment for a variety of food-specific purposes

5.5.2 plans, prepares, presents and evaluates food solutions for specific purposes

5.6.1 examines the relationship between food, technology and society

Students learn about:	**Students learn to:**
• trends in food such as – organic ingredients and produce – genetically modified foods – pre-prepared fresh food products (eg pre-cut vegetables, fruit, meat) – increased use of fresh herbs and spices – heat and serve meals – meal replacements (eg breakfast beverages and bars) – snack bars – electrolyte replacement drinks – use of functional foods and ingredients	• compare past and present food trends • identify current trends in food, food service and food presentation
• trends in dining and food service such as – types of establishments and levels of service including take-away, dining out, formal and buffet service – table setting, crockery, cutlery, glassware, linen	• identify examples of service offered by a range of hospitality establishments
• trends in food presentation and food styling including – garnishing and decorating – plating styles	• plate food for service • design, plan, prepare and present safe, appealing contemporary food that reflects the latest food trends
• food styling and photography	• identify examples of food styling and photography • explain the influence of food styling and photography in promoting trends • style food for photography

Students learn about:	**Students learn to:**
• factors influencing acceptance of food trends including – personal experiences (eg development of food habits restricting experimentation with food) – cultural taboos and beliefs (eg acceptance of non-traditional food sources and delicacies) – tradition (eg foods traditionally served at occasions such as Easter, Ramadan, Hannukah, Chinese New Year, weddings)	• relate the factors that influence the acceptance of new food trends to examples of recent trends
• the relationship between marketing and food trends	• discuss the role of the media in promoting food trends

Additional content	
Students learn about:	**Students learn to:**
• marketing of current food trends	• create an innovative marketing concept for a current food trend
• food styling and photography for marketing through print or electronic media	• produce a visual image of styled food using computer technology

Life Skills

For some students with special education needs, particularly those students with an intellectual disability, it may be determined that the above content is not appropriate. For these students, Life Skills outcomes and content can provide the basis for the development of a relevant and meaningful program – see section 8.

8 Life Skills Outcomes and Content

The Board of Studies recognises that a small percentage of students with special education needs may best fulfil the mandatory curriculum requirements for Food Technology by undertaking Life Skills outcomes and content. (Requirements for access to Life Skills outcomes and content are detailed in section 1.2.)

Life Skills outcomes will be selected on the basis that they meet the particular needs, goals and priorities of each student. Students are not required to complete all outcomes. Outcomes may be demonstrated independently or with support.

In order to provide a relevant and meaningful program of study that reflects the needs, interests and abilities of each student, schools may integrate Food Technology Life Skills outcomes and content across a variety of school and community contexts.

8.1 Outcomes

Objectives Students will develop:	**Outcomes** A student:
1 knowledge, understanding and skills related to food hygiene, safety and the provision of quality food	LS1.1 demonstrates hygienic and safe practices in the selection, handling and storage of food
2 knowledge and understanding of food properties, processing and preparation and an appreciation of their interrelationship to produce quality food	LS2.1 recognises the relationship between food properties, preparation and processing
3 knowledge and understanding of nutrition and food consumption and an appreciation of the consequences of food choices on health	LS3.1 recognises the nutritional value of food items LS3.2 recognises the impact of food habits and choices on health
4 skills in researching, evaluating and communicating issues in relation to food	LS4.1 gathers and uses information from a variety of sources LS4.2 uses a variety of communication techniques
5 skills in designing, producing and evaluating solutions for specific food purposes	LS5.1 participates in making food items LS5.2 uses appropriate equipment and techniques in making a variety of food items LS5.3 demonstrates safe practices in the making of food items LS5.4 cares for equipment
6 knowledge, understanding and appreciation of the significant role of food in society	LS6.1 explores the impact of innovation and emerging technologies on food LS6.2 recognises the significant role of food in society

8.2 Content

The content forms the basis for learning opportunities. Content will be selected on the basis that it meets the needs, goals and priorities of each student. Students are not required to complete all of the content to demonstrate achievement of an outcome.

The examples provided are suggestions only.

Outcome LS1.1: A student demonstrates hygienic and safe practices in the selection, handling and storage of food.	
Students learn about:	**Students learn to:**
• hygiene and safe practices in the selection, handling and storage of food	• use hygienic and safe practices in – selecting food, eg check 'use-by'/'best before' dates, check for observable contamination including mould, vermin infestation, foreign objects, colour changes, odour, taste, swollen cans, damaged packaging, tamper evident seals – handling and preparing food, eg thoroughly wash hands, wear personal protective equipment, cover cuts and abrasions with appropriate dressings, cover or secure hair, use utensils and equipment safely and appropriately when handling and serving food – storing food, eg refrigerate perishable foods, retain hot and cold foods at correct temperature, store dry cereal products in airtight containers
• possible health risks	• recognise risk areas, eg cross-contamination, bacterial transfer, poor personal hygiene, incorrect preparation and storage of food

Outcome LS2.1:	A student recognises the relationship between food properties, preparation and processing.
Students learn about:	**Students learn to:**
• food properties including – texture – odour – colour – taste	• recognise properties of common foods, eg carrots are crisp when eaten raw (texture), milk can smell sour when out of date (odour), bananas turn brown when over-ripe (colour), lemons have a sour taste (taste)
• changes that occur to food as a result of preparation and processing	• recognise changes to food properties as a result of preparation, eg eggs become light and frothy when beaten, eggs firm or set when poached, rice softens and swells when boiled • recognise changes to food properties as a result of processing, eg examine the texture, colour and flavour of peas – raw, freeze dried, canned, frozen
• reasons for changing food properties through preparing and processing food	• recognise why foods are prepared and processed, eg improving palatability, increasing shelf life, convenience, transport and storage • select appropriate ingredients for preparing and processing foods in the context of making food items

Outcomes LS3.1: A student recognises the nutritional value of food items.	
Students learn about:	**Students learn to:**
• functions of food in the body – growth and development – provide energy – repair and maintain the body	• recognise the functions of food in the body eg milk assists in developing healthy bones, cereals provide energy, fruit and vegetables promote healthy skin and hair
• food nutrients – proteins – carbohydrates – vitamins – minerals – fats – water	• recognise major sources and functions of food nutrients eg – protein in meat for growth and repairing the body – carbohydrate in cereals for energy – vitamins in fruit and vegetables to prevent disease
• nutritious foods	• recognise foods which provide high levels of nutrition, eg fruit is more nutritious than chips as a snack, a smoothie is more nutritious than cola as a drink
• food models which could include – Australian Dietary Guidelines – Australian Guide to Healthy Eating	• use current food models in the context of making food choices eg use food guides to plan a day's meals with pictures and drawings, use the Australian Guide to Healthy Eating to plan a day's meals for an active adolescent
• food labelling	• use food labelling to identify nutritious foods, eg nutrition panel on packaging, order of list of contents, symbols such as Healthy Heart tick, persuasive marketing such as promoting low fat, lite, salt reduced food products

Outcome LS3.2: A student recognises the impact of food habits and choices on health.	
Students learn about:	**Students learn to:**
• factors that influence food habits and choices	• recognise the factors that influence food habits and choices including – cost – marketing – nutrition – culture – body image – convenience/time – taste – food intolerances/allergies
• relationship between food choice and health	• recognise the impact of poor food choices on health including – overweight/obesity – skin conditions – dental health – heart disease – allergic reactions

Outcome LS4.1: A student gathers and uses information from a variety of sources.	
Students learn about:	**Students learn to:**
• obtaining information from a variety of sources	• access sources of information in the context of a food project including, electronic media, print media, library, internet, CD-ROM: eg make a collage of foods suitable for a family celebration day, use the internet to locate recipes for a vegetarian dinner, access a variety of sources to plan a day's meals to meet the nutritional requirements of pregnancy

Outcome LS4.2: A student uses a variety of communication techniques.	
Students learn about:	**Students learn to:**
• using a variety of communication techniques	• use techniques to communicate ideas including pictures, photographs, models, pamphlets, computer graphics, discussions, eg use a template to write a breakfast menu, design a menu for a fast food outlet, use a variety of communication techniques to present ideas for an original food package

Outcomes
A student:
LS5.1 participates in making food items.
LS5.2 uses appropriate equipment and techniques in making a variety of food items.
LS5.3 demonstrates safe practices in the making of food items.
LS5.4 cares for equipment.

Students learn about:	**Students learn to:**
• using a process in the context of making a food item • techniques used in making food items • equipment used in making food items	• participate in making food items eg measure and combine a variety of ingredients to make muesli, make a muffin suitable for breakfast, make a breakfast following an established meal pattern • follow the steps in a process to make a variety of food items, eg – explore ideas: use a variety of sources to find recipes, make menu selections, present ideas – plan: identify tasks and allocate according to skills, consider ingredients for cost and availability, prepare work flow plan – use personal protective equipment – select techniques and requirements: choose and list ingredients, appliances, cooking equipment, utensils, serving dishes, and table setting – prepare ingredients, cooperate with others in group tasks, present in appealing manner, serve – evaluate: consider such things as teamwork, visual appeal, variety, taste, colour, texture
• the application of Work Health and Safety practices in relation to safe handling of a variety of materials/ingredients, utensils and appliances	• recognise properties of materials, ingredients, utensils and appliances that make them dangerous, eg flammability, toxicity, sharpness, weight, temperature, electrical, contamination • recognise safety labelling, eg international symbols, safety signage, colour coding • carry and transfer materials, utensils and appliances safely, eg handling knives, transferring hot food, carrying objects of varying weights and lengths • use materials, utensils and appliances safely in the context of making food items
• routines for care of equipment including utensils and appliances	• store equipment appropriately • regularly clean equipment after use • keep workplaces clean and clear

Outcome LS6.1: A student explores the impact of innovation and emerging technologies on food.	
Students learn about:	**Students learn to:**
• the impact of innovation and emerging technologies on food and food products	• recognise food innovations, eg artificial sweeteners, microwaveable foods, soft butters/margarines, ultra high temperature milk
• the impact of innovation and emerging technologies on equipment, preparation and processing techniques	• recognise food preparation equipment that has resulted from innovation and technology, eg microwaves and microwave safe dishes, proliferation of appliances with a specific purpose (piemaker, juicer), utensils that are heat resistant
• reasons for food innovation	• explore factors that have motivated food innovations, eg health, availability of foods, cost, convenience

Outcome LS6.2: A student recognises the significant role of food in society.	
Students learn about:	**Students learn to:**
• the role of food in society	• recognise food as a basic physical need • enjoy a variety of food • recognise the social aspects of food • explore cultural influences on food • explore food industry careers

9 Continuum of Learning in Food Technology K–10

9.1 Stage Statements

Stage statements illustrate the continuum of learning in the *Food Technology Years 7–10 Syllabus* and are summaries of the knowledge, understanding, skills, values and attitudes that have been developed by students as a consequence of achieving the outcomes for the relevant stage of learning.

Early Stage 1 – Science and Technology

Students who have achieved Early Stage 1 show a growing awareness of, and interest in, the natural and made environments. They demonstrate confidence in proposing ideas for designs they develop through play and modelling. They demonstrate curiosity about artefacts, events, phenomena, places and living things around them.

Early Stage 1 students use play to explore ideas, manipulate materials and trial solutions. They develop and begin to refine their understanding of environments, materials, equipment and other resources through trial and error. They ask questions, suggest ideas, propose their own explanations and are able to report verbally and graphically on their actions and observations.

Students in this stage use their senses to observe features of their immediate environment and to explore the properties of a range of common materials. They identify and group living and non-living things according to some common characteristics.

Students explore and identify the needs of people and other living things. They recognise the use of some forms of energy and their ideas about it are beginning to develop as they experience energy in different contexts.

Students generate their own ideas, using make-believe, and express these verbally, pictorially and through modelling. They are unlikely to perceive the steps in a designing and making process as they often work in situations where these aspects occur at the same time. They identify what they like or dislike about their designs or explorations.

Students in Early Stage 1 recognise that information can come from a variety of sources, including other people and from different media, for example, books and videos. They demonstrate an awareness of a range of uses for computer-based technology as well as showing an emerging confidence in their ability to explore and use computer-based technologies, with assistance, to create text, images and play games.

Students show growing awareness of the appropriate use and maintenance of a range of classroom equipment. They give reasons for safe working practices and organisational procedures related to the use of equipment, resources and materials. Students develop ideas through the use and manipulation of concrete materials as a means of progressing towards abstract thought.

Stage 1 – Science and Technology

Students who have achieved Stage 1 are developing an awareness of the wider world and are applying their scientific and technological understanding to new and different situations. They are starting to develop the social skills required to investigate, design and make products and services.

Students are starting to appreciate the interdependence of living things and their environments. They recognise that people create products, services and environments to meet their own needs. They build on their existing understanding of some of the forms of energy.

Students are able to interpret information and make predictions based on their own observations. They are better able to accept that the result of a test may be different from what was originally expected.

Students are able to recognise the purpose of an investigation and seek further information as a result of their own curiosity. They begin to see that an investigation is a series of orderly steps. They use their senses to identify similarities and differences. Students show curiosity about natural and made environments and seek explanations that allow them to interpret their observations.

Using plans, drawings and models, Stage 1 students begin to generate and select ideas to best meet design task objectives, and give simple explanations of why they have chosen a certain idea. Students in this stage can draw plans for a design and can explain some of the features and materials to be used. They can write labels and simple explanations when creating images.

Students recognise and discuss with others some of the strengths and limitations of what they have done and identify some changes that could be made to improve plans or models, for example in appearance. They make comparisons about what they like and dislike about familiar products, systems or environments.

Students effectively manipulate materials that are available in the classroom environment, and show a growing awareness of the different properties of such materials and how they affect the way in which the materials are used. They recognise that some materials occur naturally, while others are made.

Students have a developing awareness of a range of media and information products. They are able to use computer technology to start and open files or applications, save and shut down. They are able to use computer-based technologies where appropriate for a given task.

They are able to identify the different forms of technology in their immediate environments and explain how they help us. They safely use, maintain and store equipment such as scissors, magnifying glasses, computers and disks.

Stage 2 – Science and Technology

Students who have achieved Stage 2 are able to initiate their own investigations as a result of something that has aroused their curiosity. They ask perceptive questions and respond to design tasks in innovative ways. They identify ways of improving their own scientific and technological activities by considering issues such as how well something works, its appearance and how it might affect the environment.

Students develop the capacity to ask questions to clarify understanding. They predict outcomes by proposing explanations and testing to see if their predicted outcomes eventuate. As students develop skills in predicting, testing, recording results and drawing conclusions, they begin to form understanding about 'fair testing' that takes into account the need for consistent conditions combined with one variable, in order to ensure accurate results.

Students who have achieved Stage 2 are able to explore ideas for investigations and their design proposals in order to identify where decisions still need to be made, and to suggest possible courses of action. Students may suggest modifications to improve their initial proposals, including the selection of different solutions to arrive at a suitable outcome.

Students are able to explore the properties, capabilities and working characteristics of both natural and manufactured materials and components. They recognise that materials are varied and have different properties that affect their use. They can select, maintain and safely use classroom tools and equipment, hardware and software, and justify their selection for particular tasks.

Students give consideration to issues such as function and aesthetics when designing and evaluating products, services and environments. They can identify some limitations when carrying out a design task. Students develop plans that show some consideration of the types and quantities of materials required and an awareness of the need for accuracy in a plan for production purposes.

Students recognise the function of some hardware and software and are able to select and use these to meet the requirements of a task. They can discuss the possibilities and limitations of using a range of technology including computer-based technology.

Students are developing a capacity to understand relationships in the natural world. They can identify and describe some aspects of the structure and function of living things and some of the ways living things interact. They can also identify and describe some of the interactions of the Earth with other parts of the solar system. Students in this stage devise systems that inform or utilise their understanding of some forms of energy.

Students also demonstrate a greater understanding of and control over a design process. They recognise the importance of evaluation throughout a design cycle.

Stage 3 – Science and Technology

Students who have achieved Stage 3 are able to undertake investigations independently in order to satisfy their own curiosity. They demonstrate a willingness to initiate their own investigations; this might include designing appropriate fair tests to evaluate a range of possible explanations for the results of their investigations.

Students select and use appropriate language, structures and media and demonstrate skills in critically examining and communicating scientific and technological ideas and issues. Students can relate their scientific and technological understanding to new tasks or different situations.

Students research and investigate to identify phenomena and processes that have influenced Earth over time. They build on their existing understanding of forms of energy.

Students are aware of the skills and processes involved in designing and making, investigating and using technology. They manage the design process including aspects of time management, design constraints and needs of the target audience. At this stage, they can make decisions involving some conflicting interests or issues, for example ethical, aesthetic, environmental and cultural.

Students use two- and three-dimensional drawings and models to develop and modify their design ideas and to communicate details to others. They recognise and use some conventions and symbols related to developing plans and diagrams, such as measurements and some use of scale. They can observe the form and detail of objects carefully in order to produce accurate drawings from different views and they reflect on their drawings, sketches or computer models.

Students are aware of a range of issues related to scientific and technological achievements. They are capable of acquiring information from a variety of sources and are able to experiment with new techniques and skills as technologies change. Students identify emerging trends by using data, diagrams and a range of tools and equipment to assist with observations.

Students recognise that computer-based technologies have a wide range of applications in society and can identify and describe some of the effects of such technologies on individuals and communities. Students who have achieved Stage 3 can confidently and competently use a range of computer-based hardware and applications. Students at this stage can identify alternative uses and can be creative in adapting available software to the requirements of a task.

Students reflect on the methods used and positive and negative results of technological and scientific activity both throughout their own projects and in personal, local and global contexts.

Stage 4 – Technology (Mandatory)

Students at Stage 4 are able to independently initiate design projects and investigations that reflect an understanding of needs and opportunities. They demonstrate the ability to research and extract information from a variety of sources and a willingness to use experiments and tests to enhance the development of a design project. They describe factors that influence design.

Students select and use a broad range of media and method and appropriate language and structures to accurately communicate design ideas to a diverse audience. This may include recounting the process of designing, producing and evaluating used when developing design projects. Students are aware of the skills and processes involved in designing and are able to generate and communicate design ideas and solutions. They develop knowledge and understanding of a range of design processes, roles of designers and associated work opportunities. They can identify what makes good design and are able to creatively develop quality design projects.

Students responsibly, safely, confidently and accurately apply a range of contemporary and appropriate tools, materials and techniques and understand the implications and applications of these in the wider community. Students demonstrate competence when using a range of ICTs and have the ability to select and use them appropriately in developing design projects.

Students recognise the importance of safety, quality and management in the design and production of design projects. They learn to manage their own time by sequencing processes of designing, producing and evaluating to plan ahead. They work collaboratively and learn to work safely with others in technological environments.

Throughout the design process students reflect on and evaluate their design projects. They consider the impact of innovation and emerging technology on society and the environment and identify and explain ethical, social, sustainability and environmental considerations related to design projects.

Stage 4 – Food Technology

Students at Stage 4 have developed higher order understandings and skills in the context of more specialised technology applications through a study of Food Technology.

Students recognise the importance of hygienic handling of food when developing safe and appealing products. They list the basic components of a variety of foods and describe changes, which occur during processing, preparation and storage of food.

Students relate the nutritional value of foods to health and identify the factors that influence food habits.

Stage 5 – Food Technology

Students at Stage 5 make informed decisions based on knowledge and understanding of the impact of food in society, of food properties, preparation and processing, and the interrelationship of nutrition and health. This understanding enables them to design, manage and implement solutions, in a safe and hygienic manner, for specific purposes with regard to food.

Students select, use and apply appropriate terminology, resources and a broad range of media to accurately communicate ideas, understanding and skills to a variety of audiences for a number of purposes.

Students demonstrate practical skills in preparing and presenting food that enable them to select and use appropriate ingredients, methods and equipment. Students apply skills and confidence in managing, realising and evaluating solutions for specific food purposes.

Through the study of Food Technology, students are aware of the development of technology and its impact on the individual, society, the environment and the food industry. Students have knowledge, skills and understanding of a range of processes, resources and technologies, including computer-based, appropriate to the manufacture and preparation of food. Students at Stage 5 can confidently and competently use a range of technologies.

Students have a body of knowledge, skills, values and attitudes and apply these in a practical manner. Students express ideas and opinions, experiment and test ideas and demonstrate responsibility in decision-making in a safe learning environment.

Students reflect on and evaluate decisions made in relation to solutions for specific purposes with regard to food at a personal level, and also consider the social implications of these in a variety of settings.

10 Assessment

10.1 Standards

The Board of Studies *K–10 Curriculum Framework* is a standards-referenced framework that describes, through syllabuses and other documents, the expected learning outcomes for students.

Standards in the framework consist of two interrelated elements:
- outcomes and content in syllabuses showing what is to be learnt
- descriptions of levels of achievement of that learning.

Exemplar tasks and student work samples help to elaborate standards.

Syllabus outcomes in Food Technology contribute to a developmental sequence in which students are challenged to acquire new knowledge, understanding and skills.

The standards are typically written for two years of schooling and set high, but realistic, expectations of the quality of learning to be achieved by the end of Years 2, 4, 6, 8, 10 and 12.

Using standards to improve learning
Teachers will be able to use standards in Food Technology as a reference point for planning teaching and learning programs, and for assessing and reporting student progress. Standards in Food Technology will help teachers and students to set targets, monitor achievement, and, as a result, make changes to programs and strategies to support and improve each student's progress.

10.2 Assessment for Learning

Assessment for learning in Food Technology is designed to enhance teaching and improve learning. It is assessment that gives students opportunities to produce the work that leads to development of their knowledge, understanding and skills. *Assessment for learning* involves teachers in deciding how and when to assess student achievement, as they plan the work students will do, using a range of appropriate assessment strategies including self-assessment and peer assessment.

Teachers of Food Technology will provide students with opportunities in the context of everyday classroom activities, as well as planned assessment events, to demonstrate their learning.

In summary, *assessment for learning*:
- is an essential and integrated part of teaching and learning
- reflects a belief that all students can improve
- involves setting learning goals with students
- helps students know and recognise the standards they are aiming for
- involves students in self-assessment and peer assessment
- provides feedback that helps students understand the next steps in learning and plan how to achieve them
- involves teachers, students and parents in reflecting on assessment data.

Quality Assessment Practices

The following *Assessment for Learning Principles* provide the criteria for judging the quality of assessment materials and practices.

Assessment for learning:

- **emphasises the interactions between learning and manageable assessment strategies that promote learning**
  In practice, this means:
  – teachers reflect on the purposes of assessment and on their assessment strategies
  – assessment activities allow for demonstration of learning outcomes
  – assessment is embedded in learning activities and informs the planning of future learning activities
  – teachers use assessment to identify what a student can already do.

- **clearly expresses for the student and teacher the goals of the learning activity**
  In practice, this means:
  – students understand the learning goals and the criteria that will be applied to judge the quality of their achievement
  – students receive feedback that helps them make further progress.

- **reflects a view of learning in which assessment helps students learn better, rather than just achieve a better mark**
  In practice, this means:
  – teachers use tasks that assess, and therefore encourage, deeper learning
  – feedback is given in a way that motivates the learner and helps students to understand that mistakes are a part of learning and can lead to improvement
  – assessment is an integral component of the teaching-learning process rather than being a separate activity.

- **provides ways for students to use feedback from assessment**
  In practice, this means:
  – feedback is directed to the achievement of standards and away from comparisons with peers
  – feedback is clear and constructive about strengths and weaknesses
  – feedback is individualised and linked to opportunities for improvement.

- **helps students take responsibility for their own learning**
  In practice, this means:
  – assessment includes strategies for self-assessment and peer assessment emphasising the next steps needed for further learning.

- **is inclusive of all learners**
  In practice, this means:
  – assessment against standards provides opportunities for all learners to achieve their best
  – assessment activities are free of bias.

10.3 Reporting

Reporting is the process of providing feedback to students, parents and other teachers about students' progress.

Teachers can use evidence gathered from assessment to extend the process of *assessment for learning* into their *assessment of learning*. In a standards-referenced framework this involves teachers in making professional judgements about student achievement at key points in the learning cycle. These may be at the end of a year or stage, when schools may wish to report differentially on the levels of knowledge, understanding and skills demonstrated by students.

Descriptions of levels of achievement for Stage 4 and Stage 5 in Food Technology have been developed to provide schools with a useful tool to report consistent information about student achievement to students and parents, and to the next teacher to help to plan the next steps in the learning process. These describe observable and measurable features of student achievement at the end of a stage, within the indicative hours of study. Descriptions of levels of achievement provide a common language for reporting.

At Stage 5 there are six levels of achievement. Level 6 describes a very high level of achievement in relation to course objectives and outcomes. Level 2 describes satisfactory achievement, while the level 1 description will help identify students who are progressing towards the outcomes for the stage.

At the end of Year 10, teachers of Food Technology Years 7–10 will make an on-balance judgement, based on the available assessment evidence, to match each student's achievement to a level description. This level will be reported on the student's School Certificate Record of Achievement.

At Stage 4 there are four levels of achievement. Level 4 describes a very high level of achievement; levels 2 and 3 describe satisfactory and high achievement that should provide a solid foundation for the next stage of learning. The level 1 description will help identify students who are progressing towards the outcomes for the stage.

For students undertaking Life Skills outcomes and content in Years 7–10, the content listed for each identified Life Skills outcome forms the basis of the learning opportunities for these students. It also provides examples of activities on which teachers can base judgements to report student progress in relation to individual learning goals.

10.4 Choosing Assessment Strategies

Planning for assessment is integral to programming for teaching and learning. In a standards-referenced framework, teachers assess student performance on tasks in relation to syllabus outcomes and make on-balance judgements about student achievement. Assessment relies on the professional judgement of the teacher and is based on reliable data acquired in a fair and challenging environment, from multiple performances in a variety of contexts. Assessment is fundamental for furthering student learning.

In planning programs, teachers, individually and collaboratively, review the syllabus and standards materials. They use these materials to describe for themselves what students should know and be able to do at a particular stage, and they consider the kinds of evidence their students could produce to show they have learnt what they needed to learn.

Students are provided with a description of the learning expected to be accomplished, opportunities to discuss the criteria on which judgements will be based, time to learn, and where possible, examples of what that learning looks like.

Assessment is used to determine the students' initial knowledge, understanding and skills, to monitor student progress and to collect information to report student achievement. The assessment cycle is continuous; students receive and give themselves feedback on what they have learnt, and what needs to be done to continue their learning. Students gain information about their learning through feedback from teachers and from self-assessment and peer assessment. The challenge and complexity of assessment tasks increase to enable students to develop evaluative independence as they assess their own knowledge, understanding and skills, and determine ways to improve their learning.

Teachers of Food Technology should employ a range of assessment strategies to ensure that information is being gathered regarding the knowledge and understanding that are being acquired, and the skills that are being developed. Strategies should be appropriate to the outcomes being addressed, be manageable in number and be supportive of the learning process. Teachers could work collaboratively in planning appropriate assessment strategies. Working collaboratively leads teachers to develop a shared understanding of the syllabus standards and also supports teachers in making consistent and comparable judgements of student achievement in relation to these standards.

In planning for assessment in Food Technology it is important for teachers to consider:

- the requirements of the syllabus
- the accessibility of the proposed activity in terms of language requirements
- the appropriateness of the challenge presented to individual students
- resource availability
- how the task will be administered
- the way in which feedback will be provided.

In planning for assessment, teachers of Food Technology need to consider how results will be recorded, with a view to ensuring that there is sufficient and appropriate information collected for making an on-balance holistic judgement of the standard achieved by the student at the end of the stage. The evidence collected should enable teachers of Food Technology to make consistent judgements to meet the various reporting requirements that the system, school and community may have.

Food Technology particularly lends itself to the following assessment techniques.

Practical experiences
Practical experiences should occupy much of the allocated time for students of Food Technology. These practical experiences include hands-on investigation, designing, producing and evaluating activities that are readily assessed through applying direct observation and teacher judgement to the process and evaluating documentation when relevant.

In practical work, Food Technology students move from undertaking teacher-guided work to a more independent mode. Assessment of these projects should reflect the change in nature and demand at different stages.

When undertaking practical experiences, students could be assessed on their ability to:
- demonstrate hygienic handling of food to ensure a safe and appealing product
- select and apply appropriate techniques and equipment
- manage WHS issues
- apply appropriate methods of food processing, preparation and storage
- plan, prepare, present and evaluate practical food activities
- apply their acquired knowledge, understanding and skills in different contexts.

Portfolios
Portfolios allow students to record the progress of projects, developing knowledge and skills in decision-making and setting priorities. They can develop critical thinking skills. When this technique is used for assessment purposes, students could be assessed on their ability to:
- plan, prepare, present and evaluate food solutions for specific purposes
- collect, evaluate and apply information from a variety of sources.

Research projects and written reports
These can be used to develop students' analytical, organisational and problem-solving skills. They may include case studies, evaluation reports, interviews and essays.
Students could be assessed on their ability to:
- collect, evaluate and apply information from a variety of sources
- examine the relationship between food and society
- analyse the factors that influence eating habits and justify food choices
- account for changes to the properties of food which occur during food processing, preparation and storage.

Presentations
These allow students to develop skills in communicating their ideas in oral, graphic and written forms using a variety of subject-specific concepts and content. They provide opportunities for students to develop their skills and reflect on the performances of others. Assessment strategies may include prepared and impromptu oral presentations, multi-media presentations and various forms of display techniques.

When presentations are used for assessment purposes, students could be assessed on their ability to:

- evaluate the impact of activities related to food on the individual, society and the environment
- collect, evaluate and apply information from a variety of sources
- communicate ideas and information using a range of media and appropriate terminology.

Written and practical tests

Written and/or practical tests can be used to determine if students have the necessary skills, can use correct techniques and can recall, interpret, comprehend and apply knowledge at a level that is appropriate for them to move on to the next step in the learning process. Tests can provide information prior to commencing a unit of work, or along the way, about students' understanding of concepts and allow the teacher to plan further learning activities. It is important that feedback is provided on test performance in order to enhance student learning.

Peer assessment

Food Technology encourages the active involvement of students in the learning process. Opportunities exist for individual and collaborative work. Activities involving peer assessment might include evaluating the contribution of individuals to a group task, and reflecting on a peer presentation.

Self-assessment

In Food Technology students are encouraged to acquire basic skills to become self-directed learners. Opportunities exist for students to reflect on their progress towards the achievement of the syllabus outcomes, using tools such as diaries and journals. This reflection provides the basis for improving their learning. Developing self-assessment skills is an ongoing process, becoming increasingly more sophisticated and self-initiated as a student progresses. Students can assess their own ability to:

- identify their own personal development over time
- identify key indicators and evidence of their own learning.