

# Culinary Program

Prince  
Edward  
Island  
CANADA

Education and Early  
Childhood Development  
English Programs



Curriculum Guides



2012

Prince Edward Island  
Department of Education and  
Early Childhood Development  
Holman Centre  
250 Water Street, Suite 101  
Summerside, Prince Edward Island  
Canada, C1N 1B6  
Tel: (902) 438-4130  
Fax: (902) 438-4062  
[www.gov.pe.ca/eecd/](http://www.gov.pe.ca/eecd/)

Printed by the Document Publishing Centre  
Design: Strategic Marketing and Graphic Design

---

# Acknowledgments

## Curriculum Committee

The Department of Education and Early Childhood Development acknowledges the contributions of the following in the development of the Career and Technical Education Skilled Trades curriculum guides.

*For contributing to the planning, writing, piloting, and implementation stages of the Culinary Skills CTE Skilled Trades curriculum*

### *Food Service Curriculum Committee*

Susan Yeo-Davidson - Westisle Composite High School

Anne Dixon - Charlottetown Rural High School

Sharon Anderson - Montague Regional High School

Bette Young - Kensington High School

Jo-Ann MacKenzie - Bluefield High School

Pam Good - Holland College

Gary Pyke

Secondary Career and Technology/Trades Program Specialist, PEI Department of Education and Early Childhood Development (2005 - 2010)

John Stephens

Secondary Career and Technology/Trades Program Specialist, PEI Department of Education and Early Childhood Development (2006 - 2012)

*For sharing curriculum documents, research, and knowledge that have guided the planning and development process for the PEI CTE Skilled Trades Curriculum*

National Research Center for Career and Technical Education, University of Louisville ([www.nccte.org](http://www.nccte.org))

---

# Contents

## Culinary Program

<b>Introduction .....</b>	<b>1</b>
Background .....	1
Rationale .....	1
Vision .....	2
<b>Program Design and Components .....</b>	<b>3</b>
Essential Graduation Learnings .....	3
General Curriculum Outcomes.....	4
Specific Curriculum Outcomes .....	4
Blooms Taxonomy.....	5
Achievement Indicators.....	7
Career and Technical Education Framework .....	8
CTE Culinary Skills Course Descriptions.....	9
Supporting Curricula.....	11
Accelerated Secondary Apprenticeship Program.....	12
Other Skilled Trades (Transferable Skills).....	12
Post-Secondary Opportunities .....	12
<b>Cross-Curriculum Specific Items.....</b>	<b>13</b>
The Senior High School Learning Environment.....	13
Safety .....	13
Meeting the Needs of All Students.....	14
Engaging the Students .....	15
Gender-Inclusive Curriculum .....	16
Avoid Stereotypical Assumptions.....	16
Model Inclusive Language.....	17

Valuing Social and Cultural Diversity .....	18
Supporting EAL Learners.....	18
Role of Parents and Guardians .....	19
Links to the Community .....	19
Education for Sustainable Development .....	20

**Teaching Strategies.....21**

Methodology.....	21
Organization/Management of the CTE Facility .....	22
Safety in Career and Technical Education .....	23
Safety Code of Conduct.....	23
CTE Teaching Strategies Graphic.....	24
Project Based Learning.....	25
Community-Based Learning .....	27
Interactive Instruction .....	27
Indirect Instruction.....	27
Direct Instruction.....	27
Literacy .....	28
Numeracy .....	30

**Assessment .....32**

Introduction.....	32
Assessment .....	32
CTE Assessment Strategies Graphic .....	42
Skills Performance.....	43
Pencil/Paper .....	44
Teacher Observation .....	45
Self/Peer Assessment.....	46
Life Work Portfolio.....	47

---

<b>Foods and Nutrition – FDS421A .....</b>	<b>49</b>
Rigor and Relevance Analysis.....	51
FDS421 Curriculum Guide.....	54
<b>Culinary Skills A – CUL801A .....</b>	<b>87</b>
Rigor and Relevance Analysis.....	89
CUL801A Curriculum Guide.....	92
<b>Culinary Skills B – CUL801B .....</b>	<b>125</b>
Rigor and Relevance Analysis.....	127
CUL801B Curriculum Guide.....	130
<b>Appendices.....</b>	<b>163</b>
Appendix A – Classroom Management .....	165
Appendix B – Literacy Strategies.....	173
Appendix C – Numeracy Strategies .....	187
Appendix D – Outcome Reference Chart.....	213



Education and Early  
Childhood Development  
English Programs

# Prince Edward Island Technology Education Curriculum

**Career and Technical  
Education**

**Culinary Program  
Introduction**

**CURRICULUM**

**This page has intentionally been left blank.**



---

# Introduction

## Background

The Department of Education and Early Childhood Development has developed a Career and Technical Education (CTE) curriculum framework following recommendations found in the Trades Strategy Report, May 2005.

This curriculum provides opportunities for a student to achieve relevant and rigorous skill based education. When combined with other high school courses, the CTE Culinary Skills curriculum prepares students for post-secondary education related to culinary arts, food service and/or food production and prepares them with practical skills needed to start a career in the food service industry.

The student may earn credits towards high school graduation and accumulate apprenticeship hours leading to Red Seal certification (Cook).

This document assists educators, students, and others to construct meaningful learning experiences in career and technical education (CTE).

## Rationale

The Career and Technical Education (CTE) curriculum is designed to provide students with opportunities to enrol in relevant programming leading to post-secondary training, education, and technical certification (when available).

The CTE curriculum will help to address the current and future needs by contributing to the development of an adequate supply of skilled workers on PEI.

The CTE curriculum will develop the students' skills, knowledge, and competencies within a career environment. The curriculum is designed to enhance the students' literacy and numeracy skills, and to develop Essential Skills and Employability Skills relevant to the workplace and lifelong learning.

The curriculum explains the value and process of the apprenticeship system, the value of post-secondary education, and the logistics of eventual certification.

Students will be encouraged to take pride and ownership in their learning journey through the development of a Personal Skills Logbook and Learning Journal to support their Lifework Portfolio.

---

The course offerings will allow flexibility within the pathway for students to explore and customize their learning plans to meet their personal needs and future plans.

Students may enrol in complementary applied courses in math, science, design, and cooperative education that will further enhance their learning experience.

Students may also choose to enrol in the Accelerated Secondary Apprenticeship Program (ASAP).

## **Vision**

The vision for Career and Technical Education in Prince Edward Island fosters the development of all learners as technologically literate and capable citizens who can develop, implement, and communicate practical, innovative, and responsible technological solutions to problems.

Career and Technical Education courses are designed to achieve the general curriculum outcomes (GCOs) for Technology Education:

- A. Technological Responsibility
- B. Technological Systems
- C. History and Evolution of Technology
- D. Technology and Careers
- E. Technological Problem Solving

---

# Program Design and Components

## Essential Graduation Learnings

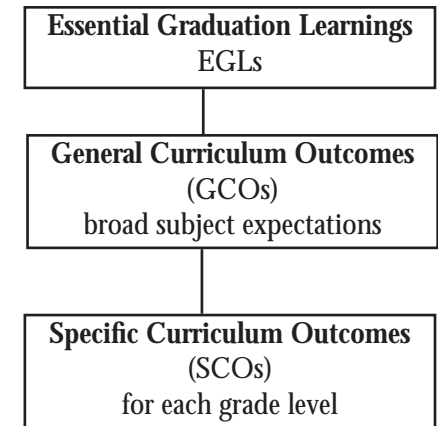
The CTE curricular program design and components are supportive of the framework incorporated in the *Atlantic Canada Technology Education Foundation Document*.

Essential Graduation Learnings (EGLs) serve as a framework for the curriculum development process and are statements describing the knowledge, skills, and attitudes expected of all students who graduate from high school. Achievement of the EGLs will prepare students to continue to learn throughout their lives. These learnings describe expectations not in terms of individual school subjects but in terms of knowledge, skills, and attitudes developed throughout the curriculum. They confirm that students need to make connections and develop abilities across subject boundaries if they are to be ready to meet the shifting and ongoing demands of life, work, and learning today and in the future. EGLs are cross-curricular, and curriculum in all subject areas is focused on enabling students to achieve these learnings.

Graduates from the public schools of Prince Edward Island will demonstrate knowledge, skills, and attitudes expressed as EGLs, and will be expected to: respond with critical awareness to various forms of the arts and be able to express themselves through the arts; assess social, cultural, economic, and environmental interdependence in a local and global context; use the listening, viewing, speaking, reading, and writing modes of language(s), and mathematical and scientific concepts and symbols to think, learn, and communicate effectively; continue to learn and to pursue active, healthy lifestyles; use the strategies and processes needed to solve a wide variety of problems, including those requiring language, and mathematical and scientific concepts; use a variety of technologies, demonstrate an understanding of technological applications, and apply appropriate technologies for solving problems.

### Essential Graduation Learnings

- Aesthetic Expression
- Citizenship
- Communication
- Personal Development
- Problem Solving
- Technology Competency



---

## **General Curriculum Outcomes**

General Curriculum Outcomes (GCOs) are statements which identify what students are expected to know and be able to do upon completion of study in a curriculum area. GCOs are stated in general enough terms to encompass a domain of student performance. These statements guide instruction and contribute to the attainment of the EGLs. GCOs are connected to key-stage curriculum outcomes and each GCO is then further defined by a set of specific curriculum outcomes.

## **Specific Curriculum Outcomes**

The learning expected of students in Prince Edward Island is defined by specific curriculum outcomes (SCOs) for each area of study within each grade. As Prince Edward Island students achieve the grade and subject-specific outcomes identified in curricula, they will deepen their understanding of each area of study as a living field of knowledge. All specific curriculum outcomes within a grade and subject-area of study are compulsory.

Specific Curriculum Outcomes state the intended outcomes of instruction, and identify what students are expected to know and be able to do within a particular grade and subject-area of study. SCOs provide the goals or targets of instruction in terms of measurable or observable student performance. SCOs provide a focus for instruction and provide a basis for the assessment of student achievement. SCOs are observable, assessable, and supported by achievement indicators that help to define the breadth and depth of the outcome. The outcome of learning described in each SCO provides the basis for selecting learning and teaching activities and assessment procedures. SCOs contribute to the achievement of the key-stage curriculum outcomes. Together, the SCOs provide a continuum of learning from entry through grade 12. In short, SCOs describe the intended outcomes of instruction in performance terms without restricting the means of achieving them.

## Blooms Taxonomy

Prince Edward Island specific curriculum outcomes require that students develop a combination of factual, conceptual, procedural, and metacognitive knowledge. Bloom's influential learning taxonomy of knowledge and cognitive process dimensions has been revised and expanded since it was first developed in 1956. The most recent revision process involved some of Bloom's former colleagues and representatives of three groups including "cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists" (Anderson & Krathwohl, 2001, p. xxviii). The revised taxonomy recognizes the different types of knowledge (the knowledge dimension) and the processes that students use as they learn (the cognitive process dimension).

The Cognitive Dimension	The Knowledge Dimension			
	Factual Knowledge	Conceptual	Procedural	Metacognitive
Remembering				
Understanding				
Applying				
Analysing				
Evaluating				
Creating				

As Wiggins and McTighe (2005) observe in *Understanding by Design*, "... in the best designs, form follows function. In other words, all the methods and materials we use are shaped by a clear conception of the vision of desired results" (p. 14). The vision or visualization of the desired results (e.g., outcomes) is a key to developing a deep understanding of the intent of each outcome. For example, when writing an outcome, it is important to determine the type of knowledge required by the outcome (e.g., factual, conceptual, procedural, metacognitive, or a combination).

As teachers reflect deeply and collaborate with each other to identify the types of knowledge required by the outcomes, they will be better able to visualize what the achievement of each outcome will look, sound, and feel like in the classroom. Clear visualization of the desired results (e.g., evidence of achievement of outcomes) assists teachers in planning learning experiences that engage students in higher level thinking and learning.


When determining the intent of curriculum outcomes and indicators, teachers need to look at the nouns to determine what is being learned, and the verbs to determine the cognitive process dimension. Note that some verbs fit into more than one dimension of the cognitive process. Several educational researches provide examples of verbs related to each cognitive process dimension.

## Curriculum Outcome Analysis for the Culinary Skills Program Curricula (FDS41A, CUL801A, CUL801B).

The three programs are designed using a student centred, outcome based curricula design based on the *Revised Blooms Taxonomy of Learning* (Anderson and Krathwahl). The tables below describe how each level of the *Revised Blooms Taxonomy* and *Knowledge Dimensions* relate to Culinary Skills.

Students should be active participants in the learning process by selecting and attending to the information required to help them construct their own meaning. This constructivist perspective of learning emphasizes how learners cognitively process new knowledge as they engage in (make sense of) meaningful learning. (Pickard 2007)

The tables describe the most commonly used verbs throughout the curricula when used as either an SCO or an Achievement Indicator. The tables provide a deeper understanding of the cognitive process and depth of understanding expected of the student to meet the intended outcome. Following is one example adapted from Anderson and Krathwohl (2001).

Revised Blooms Taxonomy – Cognitive Processing Dimension		
Lower Order Thinking Skills	Description	Verbs
	<b>Remembering</b> <i>Outcomes at this level require students to retrieve, recall, and/or recognize specific information or knowledge from memory. Remembering is when memory is used to produce definitions, facts or lists, or recite or retrieve material.</i>	follow*, define, list, state, locate, read,
	<b>Understanding</b> <i>Outcomes at this level require students to construct meaning from different sources and types of information, and explaining ideas and concepts</i>	use*, identify, describe, research, explain, recognize, demonstrate an understanding, discuss, determine, apply*, demonstrate an ability*, practice*, implement*, present, convert, maintain
	<b>Applying*</b> <i>Outcomes at this level require students to implement or apply information to complete a task, to carry out a procedure through executing or implementing knowledge. Applying relates and refers to situations where learned material is used through the creation of products.</i>	prepare*, investigate, examine, compare, interpret
	<b>Analyzing</b> <i>Outcomes at this level require students to break information into component parts and determine how the parts relate or interrelate to one another or to an overall structure or purpose.</i>	adapt*, plan*, critique, select, vary, experiment
	<b>Evaluating</b> <i>Outcomes at this level require students to justifying a decision or course of action, problem solve, or select materials and/ or methods based on criteria and standards through checking and critiquing.</i>	produce*, create*, design*, develop*,
	<b>Creating*</b> <i>Outcomes at this level require students to generate new ideas, products, or ways of viewing things</i>	
Higher Order Thinking Skills		

\* Outcomes defined by these verbs imply both a cognitive process and an active application on the part of a student

---

## Achievement Indicators

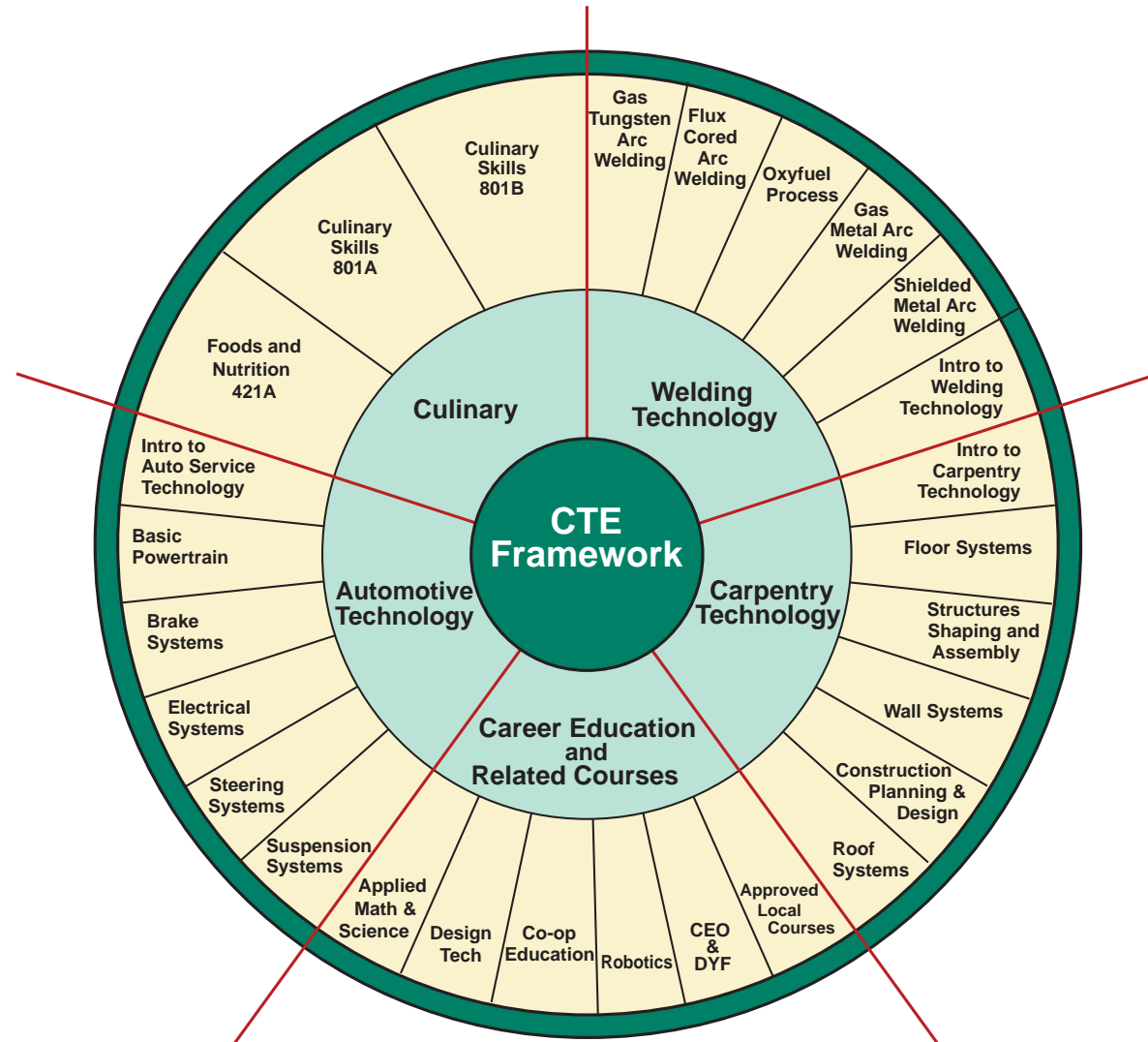
Achievement indicators help to define the breadth and depth of the SCO and are representative of what teachers may observe in the classroom. Achievement indicators, taken together as a set, define the specific level of attitudes demonstrated, skills applied, or knowledge acquired by the student in relation to the corresponding learning outcome. Indicators are examples of ways that students might be asked to demonstrate achievement of an outcome. The set of indicators is not a mandatory checklist, prioritized list of instructional activities, or prescribed assessment items. When teachers are planning for instruction, they must be aware of the set of indicators to understand the breadth and depth of the outcome. Based on their resulting understanding of the outcome, teachers may add to the existing indicators to support the intent of the outcome and to be responsive to their students' interests, lives, and prior learning. It is important to note that, if additional indicators are developed or if given indicators are substituted with alternate indicators, they must be reflective of and consistent with the breadth and depth that is defined by the given indicators. Teachers determine which indicators are most relevant at a particular time (e.g., developmental stage, time of the year, relevant circumstance) by analysing the needs and interests of the student – what s/he already knows, understands, and is able to do. Indicators help to identify the level and types of knowledge intended by the outcome. Lists of achievement indicators will begin with the phrase, “Students who have achieved this outcome should be able to...”

The complete set of indicators is an example of how students might be asked to demonstrate achievement of an outcome. The set of indicators provided for an outcome:

- provides the intent (depth and breadth) of the outcome
- tells the story, or creates a picture, of the outcome
- defines the level and types of knowledge intended by the outcome
- is not a checklist or prioritized list of instructional activities or prescribed assessment item

# Career and Technical Education Framework

The Career and Technical Education (CTE) framework is designed to provide students with opportunities to enroll in relevant career related programming leading to post-secondary training, education and technical certification (when available).





---

## CTE Culinary Skills Course Descriptions

The Culinary Skills Program consists of three 110 hour courses and is designed to prepare students for a career in the culinary industry and also prepare students for post-secondary training related to the culinary industry.

The FDS421A course is a prerequisite for the program. The 801 level courses are designed as single credit courses that can be taken in any order, following FDS421A, to allow for flexibility within the students' and school timetables.

Each courses is broken down into two components:

1. *Classroom Component* - This component of the curriculum is required by the student to learn the knowledge and skills associated with the learning outcomes of the curriculum. As with all CTE programs the Classroom Component should not exceed one third of the instructional time. Teachers are expected to use a variety of teaching strategies to engage students in the content and make connections to existing knowledge and/or other course content.
2. *Skill Development Component* - This component of the curriculum is required by the student to apply the knowledge and develop the skills related to the learning outcomes of the curriculum. This component represents two thirds of the instructional time and is designed to allow students to develop the skills that will lead to a deep understanding of the curriculum. Students should be encouraged to take ownership of this section of the course by engaging in Project-Based Learning, Design/Inquiry-based Learning, and/or Service Learning opportunities.

### Foods and Nutrition FDS421A

FDS421A - Foods and Nutrition (Prerequisite)

#### *Course Description*

Foods and Nutrition 421A is a CTE course that will provide the student with an understanding of nutritional science and food preparation. The focus of the course is on personal and family wellness in relation to healthy eating, using Canada's Food Guide.

Kitchen skills, meal planning, and food preparation will be developed through foods lab experiences. Students may be interested in Foods and Nutrition for personal development, as an introduction to post-secondary education, or a career in food services.

---

**Culinary Skills CUL801A**

## CUL801A - Culinary Skills A

*Course Description*

Culinary Skills 801A is a Career and Technical Education course designed to explore careers in the culinary service industry. The student will develop an awareness of the essential knowledge, skills, positive attitude and dedication needed to become a food service professional.

Culinary Skills 801A devotes a large portion of the learning to hands-on kitchen experiences. Students may be interested in Culinary Skills 801A as a preparation for a career in food service, mastery of basic skills for related occupations, or as a foundation for post-secondary education.

Prerequisite: Foods and Nutrition 421A

**Culinary Skills CUL801B**

## CUL801B - Culinary Skills B

*Course Description*

Culinary Skills 801B is a Career and Technical Education course designed to explore careers in the culinary service industry. The student will develop an awareness of the essential knowledge, skills, positive attitude and dedication needed to become a food service professional.

Culinary Skills 801B devotes a large portion of the learning to hands-on kitchen experiences. Students may be interested in Culinary Skills 801B as a preparation for a career in food service, mastery of basic skills for related occupations, or as a foundation for post-secondary education.

Prerequisite: Foods and Nutrition 421A

---

## Supporting Curricula

### Cooperative Education (CWS502A/B, CWS602A/B)

#### *Course Description*

Cooperative Education is an experiential method of learning that formally integrates classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. The cooperative education course is a partnership among students, schools, and the community, with specified responsibilities for each. This course consists of a classroom component and a placement component. Prior to the placement, all students must demonstrate an understanding of the pre-placement orientation expectations and participate in the development and implementation of their personalized placement learning plans. These plans outline the specific goals the students, teachers, and employers have regarding opportunities to apply and extend knowledge and practise and refine skills to demonstrate student achievement of placement expectations that reflect current workplace practices and standards.

### Career Explorations & Opportunities (CEO401A)

#### *Course Description*

This course provides relevant and experiential learning opportunities, helping students relate their learning in school to the demands of the working world and the expectations of society. It also provides opportunities for students to develop those skills, attitudes, and behaviours that will allow them to manage their lives more purposefully and effectively, enhance their personal well-being, and realize their full potential.

### Applied Mathematics (MAT801A)

#### *Course Description*

This course emphasizes essential mathematical skills that are used in various trades-related careers. Students are involved with a variety of hands-on activities directly related to mathematics and trades-related courses.

---

## **Accelerated Secondary Apprenticeship Program**

Students will be given the opportunity to register as youth apprentices through the ASAP Apprenticeship program. Upon successful completion of the program with a mark of 70%, students may challenge the Period 1 Apprenticeship Exam and receive credit towards their apprenticeship. A passing grade of 50% is required for high school credit, while a passing grade of 70% is required for opportunities recognized by Apprenticeship.

## **Other Skilled Trades (Transferable Skills)**

The four CTE Skilled Trades programs develop skills, knowledge, and competencies that will transfer to various career pathways and occupations within four major sectors of the economy:

- Transportation
- Construction
- Hospitality and Tourism
- Manufacturing

By selecting courses that best fit their needs, students may design individual learning plans that support their personal career goals. Students may also take advantage of opportunities through ASAP, Cooperative Education, Career Explorations & Opportunities, Designing Your Future, and other courses that support their learning plan.

## **Post-Secondary Opportunities**

Successful completion of CTE courses can lead students to a number of options upon completion of high school:

- Apprenticeship - working towards industry certification
- College - skilled trades programs or technology programs
- University
- Labour market

---

# Cross-Curriculum Specific Items

## The Senior High School Learning Environment

The learning environment for grades 10-12 should be

- participatory, interactive, and collaborative;
- inclusive, caring, safe;
- challenging, inquiry based, issues oriented;
- a place where resource-based learning includes and encourages the multiple uses of technology, the media, and other visual texts as pathways to learning and as avenues for representing knowledge.

Positive learning environments are places where teachers integrate new ways of teaching and learning;

- have a variety of teaching and assessment strategies;
- value the place of dialogue in the learning process;
- recognize students as being intelligent in a number of different ways and encourage them to explore various ways of knowing by examining their strengths and working on their weaknesses;
- value the inclusive classroom and engage all learners in meaningful activities;
- acknowledge the ways in which gender, race, ethnicity, and culture shape particular ways of viewing and knowing the world;
- structure repeated opportunities for reflection so that reflection becomes an integral part of the learning process.

The physical learning environment should not be restricted to one classroom. There should be ample physical space for students to use cooperative learning techniques as well as other learning approaches. There should be access to other learning centres in the school building such as labs, libraries, and computer labs. Learning should be extended to community facilities, allowing field trips and guest speakers to expand the learning environment.

## Safety

Students and teachers need to feel safe, both physically and emotionally, in the school setting. In a learning environment where cooperative, active, and collaborative teaching strategies are utilized, students must become knowledgeable of their role in enabling a safe environment to exist.

Being empowered to take ownership for their own safety and that of their peers is an essential component of the classroom learning. Teachers can provide students with the knowledge required to prevent unnecessary risks in their learning environment. By being educated about the risk factors involved in the classroom setting, students can become active participants in the ownership of their own safety. In all learning situations, the teacher needs to encourage a positive, responsible student attitude toward safety.

---

While physical safety is of utmost importance in the classroom, emotional safety is equally important. Students need to know what constitutes acceptable and unacceptable behavior, and should be encouraged to be active learners without being intimidated by others.

Risk is involved in everything a person does. To minimize risk students must become a conscious participants in ensuring a healthy, safe learning environment and must avoid complacent attitudes with regards to safety.

## Meeting the Needs of All Students

This curriculum is inclusive and is designed to help all learners reach their potential through a wide variety of learning experiences. The curriculum seeks to provide equal entitlement to learning opportunities for all learners.

The development of students' literacy is shaped by many factors, including gender, social and cultural background, and the extent to which individual needs are met. In designing learning experiences for students, teachers should consider the needs, experiences, interests, and values of all students. In recognizing and valuing the diversity of students, teachers must consider ways to

- provide a climate and design learning experiences to affirm the dignity and worth of all learners in the classroom;
- address educational disadvantage—for example, as it relates to students living in poverty;
- model the use of inclusive language, attitudes, and actions supportive of all learners;
- adapt classroom organization, teaching strategies, assessment strategies, time, and learning resources to address learners' needs and build on their strengths by
  - › providing opportunities for learners to work in a variety of learning contexts, including mixed-ability groupings;
  - › identifying and responding appropriately to diversity in students' learning styles;
  - › building upon students' individual levels of knowledge, skills, and attitudes;
  - › designing learning and assessment tasks that correspond to diverse learning styles;
  - › using students' strengths and abilities to motivate and support learning;
  - › offering multiple and varied avenues to learning;
- celebrate accomplishments in student learning.

---

## Engaging the Students

One of the greatest challenges to teachers is engaging students who feel alienated from learning—students who lack confidence in themselves as learners, who have a potential that has not yet been realized. Among them are students who seem unable to concentrate, who lack everyday motivation for academic tasks, who rarely do homework, who fail to pass in assignments, who choose to remain on the periphery of small-group work, who cover up their writing attempts fearing the judgments of peers, who are mortified if asked to read aloud, and who keep their opinions to themselves. These students are significantly delayed when it comes to learning. Some, though not all, exhibit behaviors in classrooms that further distance them from learning. Others are frequently absent from classes. These are characteristics of disengaged students.

These students need essentially the same opportunities as their peers:

- engagement in authentic and worthwhile communication situations;
- time to construct meaning, connect, collaborate, and communicate with each other;
- opportunity to form essential links between the world of text and their own world;
- a sense of ownership of learning and assessment tasks.

They need experiences designed to engage them personally and meaningfully, to make their learning pursuits relevant. They need substantial support in reading and writing. They need positive and motivational feedback. They need all of these experiences within purposeful and interactive learning contexts.

Ultimately, a curriculum for students should prepare them for life after high school. Preparing students means engaging them with resources and with people from whom they can learn more about themselves and their world. Many students feel insecure about their own general knowledge and are reluctant to take part in class discussions—deferring to their peers who seem more competent.

The greatest challenge in engaging learners is finding an appropriate balance between supporting their needs by structuring opportunities for them to experience learning success, and challenging them to grow as learners. Teachers need to have high expectations for all students and to clearly articulate these expectations.

Motivation plays a very important role in student understanding and successful completion of curriculum. Motivation for the student is heightened when the emphasis in the classroom is placed on the “whole person.” This kind of environment provides a focus to recognize achievements and initiate learning.

Many factors are cited as instruments that foster student motivation. Clear expectations and flexibility of structure enhance the desire to learn. When students have a structure which enables them to accomplish goals, their motivation increases.

---

Student support must include career awareness. Promoting student goal-setting strategies enables her/him to develop higher self-esteem, which is a natural motivator for success.

Varying instructional strategies during class time also excites motivation. Students need variety, choices, and opportunities to take ownership of their learning.

## **Gender-Inclusive Curriculum**

In a supportive learning environment, male, female, lesbian, gay, bisexual and transgender (LGBT) students receive equitable access to teacher assistance, resources, technology, and a range of roles in group activities. It is important that the curriculum reflect the experiences and values of male, female, and LGBT students, and that texts and other learning resources include and reflect the interests, achievements, and perspectives of all students. Teachers promote gender equity in their classrooms when they

- articulate equally high expectations and provide non-traditional career placement options for male, female, and LGBT students;
- provide equitable opportunity for input and response from for male, female, and LGBT students;
- model gender-fair language and respectful listening in all their interactions with students; and
- promote critical thinking and challenge discrimination based on gender and sexual orientation.

## **Avoid Stereotypical Assumptions**

Stereotypes based on gender and race can be very subtle, and it can take deliberate effort to avoid them. Unconscious stereotyping can seriously undermine the confidence of students.

Since many resources may include stereotypical content, teachers may need to adapt them. To encourage students to think about diversity, teachers may also wish to draw attention to missing or stereotypical elements and ask students to suggest changes.



---

## Model Inclusive Language

Language that is free from gender and racial bias conveys the message that all students are welcome in the CTE classroom. Language that puts the person ahead of a disability also communicates that students with diverse abilities are valued. Following are some specific suggestions for modelling the use of inclusive language in CTE.

*a) Avoid gender bias.* To steer away from language that has a gender bias, teachers can avoid using “he” or “she” as a generic pronoun. Although it was once widely assumed that “he” could be used to refer to both men and women, research has shown that readers who encounter male pronouns and nouns picture only male subjects. To enable all students to picture themselves pursuing an interest in CTE, teachers need to pay careful attention to the language they use.

To make all students feel welcome in CTE courses, teachers can refer to both men and women in examples and instructions. Instead of using “he” to describe a process or deliver instructions, they can use “he and she” or use a plural form (e.g., “Skilled tradespeople need to take care of their tools” rather than “A skilled tradesman needs to take care of his tools.”)

Whereas it is a fairly straightforward matter to avoid the generic “he”, it can be more difficult to find gender-neutral terms for many of the words common in the skilled trades environment. Below are some suggested substitutions for words that have inherent gender bias:

### **Biassed Term**

tradesman  
workmanship  
manpower  
man hours  
man (noun)  
man (verb)  
man-made  
journeyman

### **Gender-Neutral Term**

tradesperson  
quality of work  
employees, resources  
person hours, worker hours  
person, individual  
staff, operate, use, direct, work  
synthetic, artificial, handmade  
journeyperson

*b) Avoid racial bias.* Teachers can avoid racial bias by respecting the terms that ethnic groups use to refer to themselves (e.g., First Nation people). They can also make their language inclusive by avoiding the use of ethnicity as a descriptor, unless there is a legitimate need for it. For example, rather than referring to someone as a “Black chef,” in most cases one could simply refer to him or her as “a chef.”

---

*c) Put the person ahead of the disability.* Rather than referring to people as products of a disability or illness, teachers can use the expression "a person with..." For example, rather than referring to a person as "an epileptic," teachers can use the term "a person with epilepsy."

## Valuing Social and Cultural Diversity

In order to engage in and maximize learning, all students need to see their social and cultural identities reflected and affirmed in curriculum and classroom practices. It is important to recognize that students in Prince Edward Island come from increasingly diverse ethnic, racial, cultural, and social backgrounds. In addition, they communicate with the wider cultural world through technology and media in order to understand their own and others' ways of seeing and making sense of the world. Through experiential learning, or through reading, viewing, and discussing authentic texts that reflect diverse social and cultural voices, students from different social and cultural backgrounds can come to understand each other's perspectives, to realize that their own ways of seeing and knowing are not the only ones possible, and to probe the complexities of the ideas and issues they are examining.

Curriculum, classroom practices, co-op placements, and learning resources should reflect the diverse and multicultural nature of our society, examine issues of power and privilege, and challenge stereotypes and discrimination.

## Supporting EAL Learners

The Career and Technical Education curriculum is committed to the principle that learners of English as an additional language (EAL) should be full participants in all aspects of CTE. English deficiencies and cultural differences must not be barriers to full participation. All students should follow a comprehensive curriculum with high-quality instruction and coordinated assessment.

All students, and EAL learners in particular, need to have opportunities and be given encouragement and support for speaking, writing, reading, and listening in CTE classes. Such efforts have the potential to help EAL learners overcome barriers, learn, and communicate effectively within the CTE curriculum. To this end

- schools should provide EAL learners with support in their dominant language and English language within the CTE classroom;
- teachers, counsellors, and other professionals should consider the English language proficiency level of EAL learners as well as their prior course work in related CTE areas;
- the proficiency level of EAL learners should be solely based on their prior academic record, and not on other factors;

- 
- CTE teaching strategies, curriculum, and assessment strategies should be based on best practices and build on the prior knowledge and experiences of students and on their cultural heritage;
  - the nature of the CTE program should be communicated with appropriate language support to both students and parents;
  - to verify that barriers have been removed, educators should monitor enrolment and achievement data to determine whether EAL learners have gained access to, and are succeeding in, CTE courses.

## **Role of Parents and Guardians**

Parents and guardians play a vital role in the education of their children. Although they may or may not feel comfortable to help in specific subject learning, parents/guardians play a critical part in students' development. It is most important that parents/guardians understand and support school policies, and their involvement is crucial if students are to learn to accept responsibility in such areas as attendance, school safety, goal setting, and career investigation. Schools need parents and guardians to share in their children's successes.

Teachers should invite opportunities for parents and guardians to discuss these matters. Frequent parent-teacher conferences are encouraged via telecommunications and/or school-based meetings.

Involvement in school councils, home and school associations, and/or other school-based organizations enables parents and guardians to play an active role in the educational development of their child. Additionally, parents/guardians who get involved as guest speakers in the classroom can share with students their knowledge of the community and/or their experiences in specific occupations.

## **Links to the Community**

A complete curriculum allows for flexibility and inclusion of the community. Guest speakers, field trips, and presentations enable students to become more aware of the influence of the community in their lives. Students gain insight into the current workings of their local society, as they observe role models and establish contacts with the community.

Wherever possible, this curriculum guide provides suggestions for making the community an integrated part of the course.

---

## Education for Sustainable Development

Education for sustainable development (ESD) involves incorporating the key themes of sustainable development—such as poverty alleviation, human rights, health, environmental protection, and climate change—into the education system. ESD is a complex and evolving concept and requires learning about these key themes from a social, cultural, environmental, and economic perspective, and exploring how those factors are interrelated and interdependent.

With this in mind, it is important that all teachers, including CTE teachers, attempt to incorporate these key themes in their subject areas. One tool that can be used is the searchable on-line database *Resources for Rethinking*, found at [<http://r4r.ca/en>]. It provides teachers with access to materials that integrate ecological, social, and economic spheres through active, relevant, interdisciplinary learning.

---

# Teaching Strategies

## Methodology

Exemplary teachers use a variety of instructional strategies to meet the needs of all learners, and have the flexibility to call upon several different strategies both within one period and during a unit of study. Adolescent learners need a balance between practical work, listening, discussing, and problem solving. The teacher structures the learning situation and organizes necessary resources. In assessing the nature of the task, the teacher may find that the situation calls for teacher-directed activities with the whole class, small groups of students, or individual students.

As students develop a focus for their learning, the teacher moves to the perimeter to monitor learning experiences and to encourage flexibility and risk taking in the ways students approach learning tasks. The teacher intervenes, when appropriate, to provide support. In such an environment, students will feel central to the learning process.

As students accept more and more responsibility for learning, the teacher's role changes. The teacher notes what the students are learning and what they need to learn, and helps them to accomplish their tasks. The teacher can be a coach, a facilitator, a resource person, and a fellow learner. The teacher is a model whom students can emulate, and he/she instructs the student as needed during the learning process.

Through the whole process, the teacher is also an evaluator, assessing students' growth while helping them to recognize their achievements and their future needs.

In the CTE environment, the teacher acts as a facilitator to guide learning and assist students in their development of skills and abilities required to achieve the outcomes.

The CTE atmosphere provides freedom of movement and personal choice for the student. Accordingly, the student must develop a positive attitude and a level of responsibility equal to the challenge. An ideal working environment is one in which teachers and students enjoy mutual respect and trust.

Students often point to experiential activities as the best part of a program as they have the chance to work cooperatively and be actively involved in the learning process.

---

## Organization/ Management of the CTE Facility

In the organization and management of the physical space, the teacher must put some thought and planning into creating an environment that will be safe, inviting, stimulating, and interactive. The physical space needs to be clean, neat, and organized, so that students will maintain and respect the facility. A well-organized CTE environment will help the students to develop respect for the facility and the teacher.

Indicators of a positive and stimulating learning environment include the following:

- Developing a Safety Code of Conduct
- Developing a cleanup schedule and procedure to ensure the CTE facility is kept in good order and for students to develop a sense of responsibility for the maintenance and running of the CTE facility (Appendix A)
- Having a place for everything, and having everything in its place;
- Maintaining tools and equipment in proper working condition
- Organizing cabinets and inventory storage to name and display locations for easy accountability
- Keeping sets of tools full to help ensure the return of all tools
- Allowing adequate working space
- Organizing areas for both individual and small group collaboration
- Organizing space to maximize the vision or sight lines
- Maintaining an accurate inventory of tools, equipment and text resources required to support the curriculum (*Tool List*)
- Creating a list of suppliers and local businesses to support the consumable and curricular needs of the CTE program

---

## Safety in Career and Technical Education

Safety in the CTE facility is the number one priority of all teachers and students.

The Workers' Compensation Board of PEI states that "All accidents are preventable and avoidable."

CTE teachers must ensure the following:

- All fire regulations, exit procedures, and location of fire equipment are reviewed, posted, and clearly identified
- First-Aid stations, kits, and procedures are reviewed and clearly identified within the facility
- WHMIS sheets and information are reviewed and clearly identified
- All Occupational Health and Safety Regulations that apply to the particular CTE curriculum are followed
- All emergency shut-down and electrical override switches are clearly identified and accessible
- Scheduled maintenance on shop tools and equipment is completed
- A system for reporting safety concerns or issues is explained to the students
- A CTE Safety Code of Conduct is developed with and explained to each class.

## Safety Code of Conduct

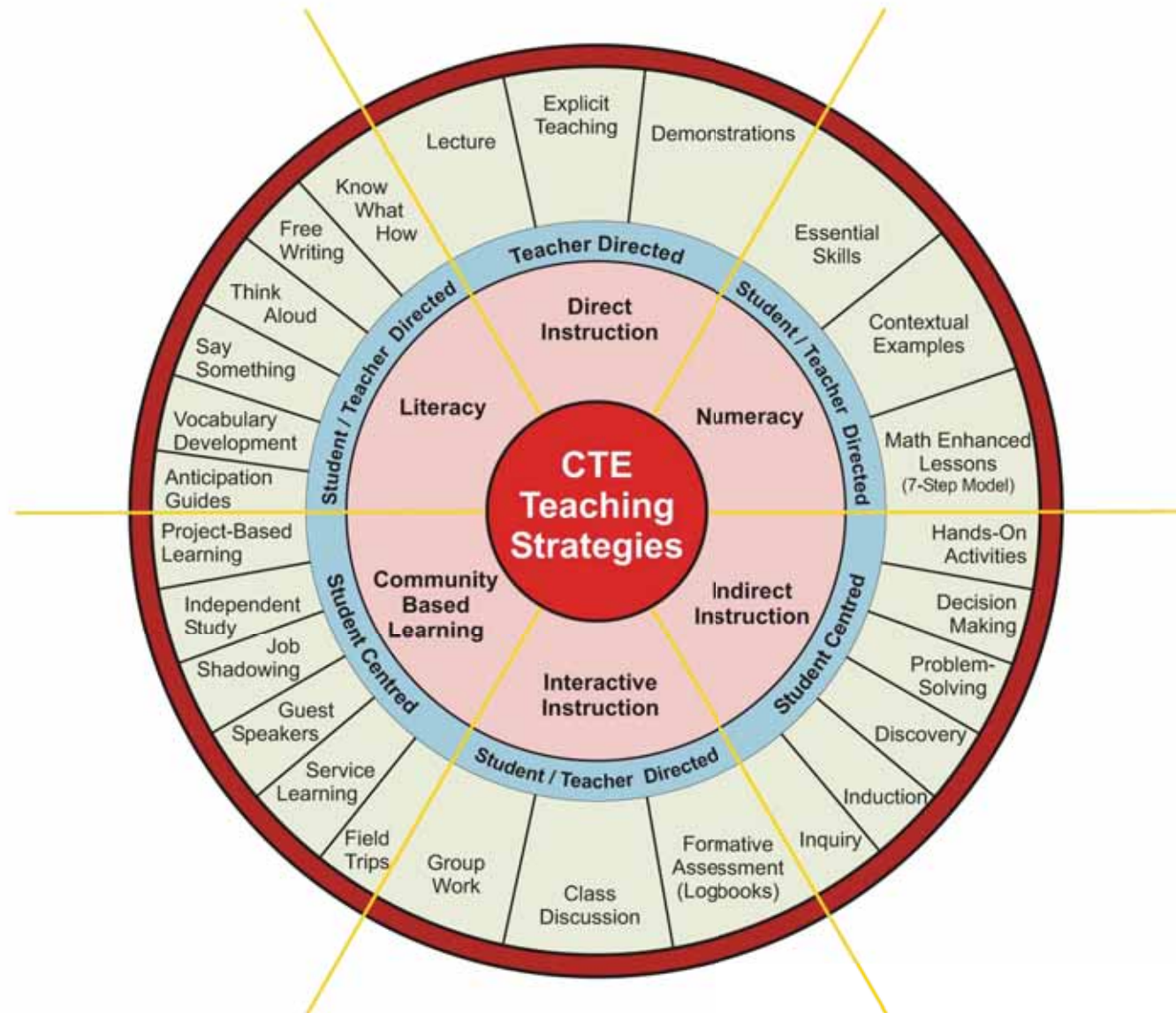
A CTE Safety Code of Conduct should be kept short and ideally be developed by each class as students tend to best adhere to codes of conduct they have had a hand in creating.

A CTE Safety Code of Conduct should be written in a positive manner to indicate the desired behavior (what students will do) as opposed to the undesired behavior (what students won't do).

A sample CTE Safety Code of Conduct appears below:

- We will respect others' right to work and learn in a safe environment.
- We will practice proper personal hygiene habits.
- We will report any safety concerns to the teacher.
- We will wear appropriate clothing and required PPE.
- We will maintain a neat and well-organized workspace.
- We will ask for permission and/or instruction before using any tools, equipment, or materials in the CTE facility.
- We will use common sense.

# CTE Teaching Strategies Graphic





---

## Project Based Learning

Project Based Learning (PBL) is a teaching and learning methodology in which students engage in a rigorous, extended process of inquiry focused on complex, authentic questions and problems as they achieve the knowledge, skills, and attitudes defined by the curriculum outcomes. A set of learning experiences and tasks guide students in inquiry toward answering a central question, solving a problem or meeting a challenge, as opposed to several activities tied together under a theme, concept, time period, culture, or geographic area (e.g. the Renaissance, the ocean, WWII, Canada). Throughout the project, students work as independently from the teacher as possible, and have some degree of “voice and choice”.

PBL is unlike traditional projects in the sense that it is informed by the curriculum and *drives* the instruction and learning, as opposed to involving students in a “fun activity” or “making something”. It is often focused on creating physical artifacts but must involve other intellectually challenging tasks and products focused on research, reading, writing, discussion, investigation, and oral presentation. Through PBL, students can develop and demonstrate in-depth understanding of academic knowledge and skills while enhancing habits of mind, along with collaboration, critical thinking, and communication skills. PBLs can be interdisciplinary in nature and allow for curriculum integration from different subject areas within one project. This learning experience ends with a high-quality product or performance created by the student(s) and presented to a public audience.

Two important components of PBL are the creation of a driving question and the collaboration with a Subject Matter Expert (SME).

### **The Driving Question**

A well-crafted *driving question* is essential to all effective PBLs. It is this question that will form the basis of explicit links with the curriculum, create the focus of the project for the students, and encourage their process of inquiry and investigation. All driving questions should be provocative, challenging, open-ended, and complex and must be linked to the core of what students are to learn as determined by the provincially authorized curriculum. Sample driving questions might include:

- Who are the heroes of our community?
- When is war justified?
- What effect does population growth have on our society?
- Is watching TV beneficial or harmful to teenagers?
- How can we create a piece of media to demonstrate diversity in our school?

---

Students may work in collaborative teams or individually to investigate, research, and refine knowledge and skills to adequately answer the driving question. Because the driving question is open-ended, students are able to reach a variety of potential conclusions in countless ways, while still building in-depth knowledge and skills. This creates the independent nature of the project and also the feeling of “voice and choice” for the students. The teacher then assumes more of a facilitator/coach role, assisting and guiding during an investigation and providing direct instruction when necessary.

**Subject Matter Expert (SME)**

A well crafted PBL also includes the role of a *Subject Matter Expert*, or *SME*. These individuals/groups play a key role in PBL as they bring first-hand authentic knowledge and experience from the specific content field to the classroom. They may be sought out by the student(s) during their investigation or prearranged by the teacher depending on the project. These experts provide additional support and information to the students related to the topics and help demonstrate to the students that the work they are completing is authentic and “real-world”. The involvement of these experts allows educators to expand the classroom walls and make strong connections and links with surrounding communities.

At the conclusion of the PBL, students are required to present their findings to a public audience. Their peers in the classroom may act as the dress rehearsal for this presentation and provide valuable feedback to refine the presentation. However, in order to “raise the stakes” for the students’ final presentation, students should present their findings to members of the community, experts in the field (including the involved SME), parents, or school administration in addition to presenting to their classroom peers.

Adapted from *PBL Starter Kit*, (2009) The Buck Institute for Education. ([www.bie.org](http://www.bie.org))

---

## Community-Based Learning

Community-based learning programs encourage the expansion of learning opportunities for elementary, intermediate, and senior high school students by bringing the community into the school and by placing students in the community as part of their studies. Community-based learning is a partnership involving the student, family, school, and community, with each of the partners sharing the responsibility for the student's learning experience.

Students benefit from the expertise, talent, and resources of community-based service organizations, agencies, businesses, industry, citizen groups, entrepreneurs, and parents/guardians; and gain opportunities to apply and enhance, in real-life contexts, knowledge, skills, and attitudes acquired through their work in school.

Community-based learning enhances students' personal development, their sense of belonging in their community, and their understanding of community roles and responsibilities. Community-based experiences improve students' understanding of employment requirements and the links between their future plans and the knowledge, skills, and attitudes they are acquiring in school. Encouraging the local community and businesses to become involved in the classroom helps to extend the learning beyond the classroom walls and provides relevance to the classroom experience.

## Interactive Instruction

*Interactive Instruction* relies heavily on discussion and sharing among participants. For the teacher, it involves management and organizational skills to set up activities which may involve either small or large groups or the whole class. The teacher must observe the students in action and have good record keeping methods. The students will learn from peers and teacher through interactions with both.

## Indirect Instruction

*Indirect Instruction* involves inquiry, induction, problem solving, decision making and discovery. It is mainly student centred and is used to generate alternatives and solve problems. The teacher acts as facilitator, supporter, and resource person, while the student is highly involved in observing, investigating, inferring information from data, or forming hypotheses.

## Direct Instruction

*Direct Instruction* is highly teacher directed, and consists of lectures, explicit teaching, and demonstrations. It is effective for providing information and developing step-by-step skills.

---

## Literacy

Three of the nine Essential Skills as identified by Human Resources and Skills Development Canada (HRSDC) are related to literacy: document use, reading text, and writing. In Career and Technical Education students are expected to demonstrate a proficiency in these three Essential Skills. Employing cross-curricular reading and writing strategies in the delivery of the curriculum will provide students with tools that will help them build knowledge and develop strategies to become more proficient in these Essential Skills.

## Pre-Reading Strategies

**Pre-Reading** - strategies are used prior to assigning a reading and are designed to activate the students' prior knowledge on a subject, promote inquiry and discussion, provide clarity and give the students reason to engage in the text. Examples include the following:

- *Free Writing* provides students with a short amount of time to record what they already know or believe about the topic. Free writes should never be collected or evaluated. The only rule of the free write is that students write for the entire time allotted even if they run out of things to say.
- *Anticipation Guides* consist of four or five statements about a topic that students are asked to either agree or disagree with prior to reading. The statements should be carefully crafted to raise the students' interest in the subject (so that all students do not respond in the same way), and be supported by the assigned reading. After reading, students should revisit and discuss their responses.

---

## During-Reading Strategies

During-Reading these strategies are designed to promote active reading of the material. They provide students with specific tasks to complete or things to discover while reading the document. During-reading strategies can be used in small groups or as individual tasks.

- *Think Aloud.* This is a very effective strategy to use when reading aloud to students. During the Think Aloud it is important to model and reflect on how you yourself make meaning when reading challenging CTE related text, and how you relate the topic back to prior topics covered.
- *Say Something.* Before assigning the Say Something, take time to model the strategy with a student or colleague and review the rules that will make for a successful Say Something (it is a good idea to post these rules so everyone can see them and be reminded of them during the activity)
  - › With your partner, decide who will say something first;
  - › When you say something, make a prediction, ask a question, clarify something you had misunderstood, and or make a connection;
  - › If you cannot do one or more of the above things, then you need to reread.
- *Rereading* - “Rereading is probably the number one strategy independent readers use when something stumps them in a text. It’s probably the last strategy dependent readers use.” (Kylene Beers). Before asking students to reread a section of text you must first set the activity up for success:
  - › Prove to students that rereading is valuable to their learning. You can model this while doing a Think Aloud where you model your thinking as you interpret the text.
  - › Provide the students with specific tasks to complete while they reread a section.
  - › Review the text as a group after everyone has reread it.

## Post-Reading Strategies

Post-Reading strategies are designed to provide students with opportunities to reflect on what they have read and make links to their learning.

- *A learning journal* provides a forum through which students can record and document their learning. For more information on the learning journal refer to Assessment Strategies.
- *Summarizing* is an effective strategy to use prior to having students complete an assigned task in the shop. This provides students an opportunity to describe what they are going to do and how they plan to accomplish it. This may be done in written form or orally, depending on the given task.

---

## Numeracy

Numeracy is one of the nine Essential Skills as identified by HRSDC.

The National Council of Teachers of Mathematics states that wanting all students to learn math does not mean that all students can or should learn math in the same way.

## Applied Mathematics (MAT801A)

Applied Mathematics provides a relevant context in which to acquire foundational mathematical content, along with opportunities to apply mathematical knowledge and skills to processes that are encountered everyday, particularly in the trades.

Applied Mathematics (MAT801A) is an excellent course for students enrolled in a CTE curriculum to further develop their foundational math skills and knowledge.

## Math in CTE

The National Research Center for Career and Technical Education (NRCCTE) has developed a Math in CTE model which addresses and makes explicit the math concepts as they arise naturally from the CTE curriculum. Math is an essential component of CTE curriculum and is an essential tool required to perform the tasks of given occupations (NRCCTE, 2006).

One of the challenges in teaching contextual math in CTE is that students are unable to transfer the math skills and knowledge to a new situation as it is too embedded in the original context (NRCCTE, 2006). The Math in CTE model addresses this challenge by bringing the math skill out of context and into the abstract, so that students may develop the understanding behind what they are learning, and then continues to provide opportunities for students to apply the knowledge in context.

By making explicit the math that is incorporated into the CTE context, students are able to make connections to their math class and develop their transferable math skills.

---

## Math in CTE 7-Step Model

Within the CTE curriculum there is a 7-step pedagogical process identified that will enable CTE teachers to identify the math skills covered in their lessons, develop a math-enhanced lesson, and assess the students' math abilities.

**1. Introduce technical lesson.**

- › Explain the technical lesson.
- › Identify the math embedded in the lesson.

**2. Assess students' math awareness.**

- › Use a formative assessment.
- › Assess whether students use the correct mathematical terms when discussing the lesson topic.
- › Use a variety of questioning /discussion techniques to determine students' math awareness.

**3. Work through math problems related to the technical lesson.**

- › Connect the technical vocabulary to the math vocabulary and gradually integrate the two, being sure to not abandon either set.

**4. Work through related contextual examples.**

- › Use examples with varying levels of difficulty.
- › Continue to bridge the gap between the technical concept and the math skills.
- › Check for understanding.

**5. Work through traditional math examples.**

- › Provide students with an opportunity to practise using a worksheet of basic math problems as they would appear on a test.
- › Move from basic to advanced examples.
- › Check for understanding

**6. Have students demonstrate understanding.**

- › Provide students with the opportunity to relate the math concept back to CTE Context.
- › Conclude the math lesson back in the context of the technical lesson.

**7. Assign a Formal Assessment**

- › Include math problems in formal assessments of the technical lesson.

Check Appendix C for some examples and graphic organizers from the NRCCTE to help develop Math in CTE lessons.

---

# Assessment

## Introduction

This section contains information about student assessment, measurement of student achievement, and evaluation.

*Assessment* techniques are used to gather information for evaluation. Information gathered through assessment helps teachers determine students' strengths and needs in their achievement of the curriculum outcomes, and guides future instructional approaches. Practices should accept the needs of diverse learners in classrooms and should accept and appreciate learners' linguistic and cultural diversity.

Teachers are encouraged to be flexible in assessing the learning success of all students, and to seek diverse ways in which students might demonstrate what they know and are able to do. Assessment criteria and the methods of demonstrating learning successes may vary from student to student depending on their strengths, interests, and learning styles.

*Evaluation* involves the weighing of the assessment information against a standard in order to make an evaluation or judgment about student achievement. Assessment informs the evaluation process.

## Assessment

Assessment should provide students with a variety of ways to demonstrate what they know and are able to do with many different types of text over time. It is the journey of their learning. Teachers collect, interpret, and synthesize information from a variety of student learning activities to gather information about student progress in relation to the achievement of learning outcomes.

Students must recognize each learning activity as worthwhile and relevant, and understand the expectations for each. Information provided through assessment activities allows teachers to give descriptive feedback to students to support and monitor future learning, and allows for necessary adjustments to instruction. Assessment feedback can also be incorporated through peer- and self-assessment activities.



---

## Purposes of Assessment

According to research, assessment has three interrelated purposes:

- assessment *for* learning to guide and inform instruction
- assessment *as* learning to involve students in self-assessment and setting of goals for their own learning
- assessment *of* learning to make judgments about student performance in relation to curriculum outcomes

Other research indicates that assessment *as* learning should be viewed as part of assessment *for* learning, because both processes enhance future student learning. In all circumstances, teachers must clarify the purpose of assessment and then select the method that best serves the purpose in the particular context.

The interpretation and use of information gathered for its intended purpose is the most important part of assessment. Even though each of the three purposes of assessment (*for, as, of*) requires a different role for teachers, and different planning, the information gathered through any one purpose is beneficial and contributes to an overall picture of an individual student's achievement.

## Assessment *for* Learning

Assessment *for* learning

Assessment *for* learning involves frequent interactive assessments designed to make student understanding visible so as to enable teachers to identify learning needs and adjust teaching accordingly. It is teacher-driven, and involves an ongoing process of learning and teaching.

- integrates strategies with instructional planning;
- requires the collection of data from a range of assessments to find out as much as possible about what students know and can do, and in order to plan for future instruction, to learn what student needs still must be addressed;
- uses curriculum outcomes as reference points, along with exemplars and achievement standards that differentiate quality;
- provides descriptive, specific, and instructive feedback to students and parents regarding the next stage of learning;
- actively engages students in their own learning as they assess themselves and understand how to improve performance;
- allows for judgments about students' progress for reporting purposes;

- 
- provides information on student performance that can be shared with parents/guardians, school and district staff, and
  - other educational professionals for the purposes of curriculum development.

This type of assessment provides ways to engage and encourage students to acquire the skills of thoughtful self-assessment and to promote their own achievement. Student achievement is compared to established criteria rather than to the performance of other students.

## **Assessment as Learning**

Assessment *as learning* actively involves students' reflection on their learning, and monitoring of their own progress. Student-driven, and supported with teacher guidance, it focuses on the role of the student as the critical connector between assessment and learning— thereby developing and supporting metacognition in students.

Assessment *as learning* is ongoing and varied in the classroom. This assessment

- integrates strategies with instructional planning;
- focuses on students as they monitor what they are learning and use what they discover to make adjustments, adaptations, or changes in their thinking so as to achieve deeper understanding;
- supports students in critically analysing their learning as it relates to learning outcomes;
- prompts students to consider how they can continue to improve their learning;
- enables students to use collected information to make adaptations to their learning processes and to develop new understandings.

The goal in assessment *as learning* is for students, with teacher support and guidance, to acquire the skills needed to be metacognitively aware of their increasing independence as they take responsibility for learning and constructing meaning. Through self-assessment, students think about what they have learned and what they have not yet learned, and decide how to best improve their achievement.

---

## Assessment of Learning

Assessment *of* learning involves strategies designed to confirm what students know, demonstrate whether or not they have met curriculum outcomes or the goals of their individual learning plans, or certify proficiency and make decisions about students' future learning needs. Assessment *of* learning occurs at the end of a learning experience that contributes directly to reported results.

Traditionally, teachers relied on this type of assessment to make judgments about student performance by measuring learning after the fact and then reporting it to others. However, used in conjunction with assessment *for* and assessment *as* learning (previously outlined), assessment *of* learning is strengthened.

### Assessment of learning

- confirms what students know and can do;
- occurs at the end of a learning experience, using a variety of tools;
- provides opportunities to report to parents/guardians, school and district staff, and other educational professionals evidence to date of student achievement relative to learning outcomes, for the purpose of curriculum development;
- may be either criterion-referenced (based on specific curriculum outcomes) or norm-referenced (comparing student achievement to that of others);
- provides a foundation for discussions on student placement or promotion.

Because the consequences of assessment *of* learning are often far-reaching and affect students seriously, teachers have the responsibility to report student learning accurately and fairly, based on evidence obtained from a variety of contexts and applications.

---

## Designing Effective Assessment

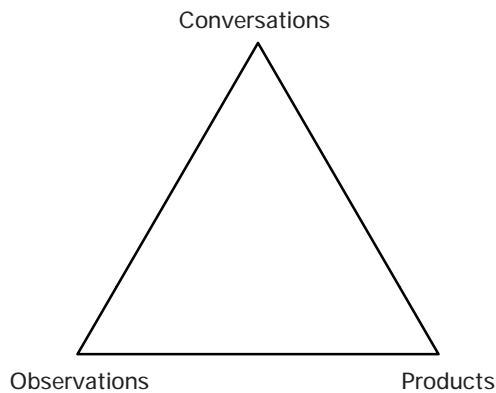
Effective assessment improves the quality of learning and teaching. It can help teachers to monitor and focus their instruction, and help students to become self-reflective and to feel in control of their own learning. When students are given opportunities to demonstrate what they know and what they can do with what they already know, optimal performance can be realized.

Teachers must collect evidence of student learning through a variety of methods. Valuable information about students can be gained through conversations, observations, and products. A balance among these three sources ensures reliable and valid assessment of student learning.

- Conversations may either be informal or structured in the form of a conference, and can provide insight into student learning that might not be apparent through observation or from products. Student journals and reflections provide a written form of conversation with the teacher.
- Observing a student while he/she is engaged in a learning activity allows a teacher insight into this process at various points throughout the activity. Observation is effective in assessing achievement of many of the speaking and listening outcomes.
- Products are work samples completed by a student. Samples can be in the form of written texts, or visual or oral products.

### Effective assessment strategies

- are explicit and are communicated to students and parents at the beginning of the school term (and at other appropriate points throughout the school year) so that students know expectations and criteria to be used to determine the level of achievement;
- must be valid in that they measure what they intend to measure;
- must be reliable in that they consistently achieve the same results when used again, or similar results with a similar group of students;
- involve students in the co-construction, interpretation, and reporting of assessment by incorporating their interests (students can select texts or investigate issues of personal interest);
- reflect where the students are in terms of learning a process or strategy, and help to determine what kind of support or instruction will follow;



- allow for relevant, descriptive, and supportive feedback that gives students clear directions for improvement;
- engage students in metacognitive self-assessment and goal setting that can increase their success as learners;
- are fair in terms of the students' background or circumstances and provide all students with the opportunity to demonstrate the extent and depth of their learning;
- accommodate the diverse needs of students with exceptionalities, including students with individual learning plans;
- assist teachers in selecting appropriate instruction and intervention strategies to promote the gradual release of responsibility;
- are transparent, pre-planned, and integrated with instruction as a component of the curriculum;
- are appropriate for the learning activities used, the purposes of instruction, and the needs and experiences of the students;
- are comprehensive and enable all students to have diverse and multiple opportunities to demonstrate their learning consistently, independently, and in a range of contexts in everyday instruction;
- include samples of students' work that provide evidence of their achievement;
- are varied in nature, administered over a period of time, and designed to provide opportunities for students to demonstrate the full range of their learning.

## The Role of the Teacher

The following chart provides information concerning the role of the teacher in assessing student learning throughout each of the assessment processes mentioned above. In addition, information is provided regarding the delivery of feedback to students during assessment *for*, *as*, and *of* learning.

The Role of the Teacher in Assessing Student Learning

Assessment <i>for</i> Learning	Assessment <i>as</i> Learning	Assessment <i>of</i> Learning
<p>Assessment <i>for</i> learning occurs throughout the learning process. It is interactive, with teachers</p> <ul style="list-style-type: none"> <li>• building and using the language of assessment by using ideas from co-created criteria</li> <li>• aligning instruction with the learning outcomes</li> <li>• identifying particular learning needs of students or groups</li> <li>• selecting and adapting materials and resources to meet the needs of students</li> <li>• creating differentiated teaching strategies and learning opportunities for helping individual students move forward in their learning</li> <li>• valuing multiple ways for students to present evidence of learning</li> <li>• providing immediate feedback that is descriptive, specific, and instructive to students</li> <li>• increasing the opportunities for students to practise skills and receive feedback</li> </ul>	<p>Assessment <i>as</i> learning promotes the development of independent learners. Teachers</p> <ul style="list-style-type: none"> <li>• model and teach the skills of self-assessment through opportunities to practise</li> <li>• guide students in setting goals and monitor progress toward them</li> <li>• provide exemplars that reflect curriculum outcomes</li> <li>• work with students to develop clear criteria of good practice</li> <li>• guide students in developing internal feedback or self-monitoring mechanisms</li> <li>• monitor students' metacognitive processes as well as their learning, and provide descriptive feedback</li> <li>• create an environment where it is safe for students to take chances and where support is readily available</li> </ul>	<p>Assessment <i>of</i> learning provides evidence of achievement. Teachers provide</p> <ul style="list-style-type: none"> <li>• a rationale for undertaking a particular assessment <i>of</i> learning at a particular point in time</li> <li>• clear descriptions of intended student learning</li> <li>• processes that make it possible for students to demonstrate their competence and skill</li> <li>• a range of alternative mechanisms for assessing the same outcomes</li> <li>• transparent approaches to interpretation</li> <li>• descriptions of the assessment process</li> </ul>

---

*Providing Feedback to Students*

Assessment for Learning

Students learn from assessment when the teacher provides specific, detailed feedback and direction to guide learning. Feedback for learning is part of the teaching process. It is the vital link between the teacher's assessment of a student's learning and the action following that assessment.

To be useful, feedback needs to be immediate and must identify the way forward. Descriptive feedback makes explicit connections between student thinking and the learning that is expected, providing the student with manageable next steps and exemplars of student work. It gives recognition for achievement and growth and includes clear direction for improvement.

Assessment as Learning

Learning is enhanced when students see the effects of what they have tried and can envision alternative strategies to understand the material. Students need feedback to help them develop autonomy and competence. Feedback as learning challenges ideas, introduces additional information, offers alternative interpretations, and creates conditions for self-reflection and review of ideas.

Assessment of Learning

Because assessment of learning comes most often at the end of a learning experience, feedback to students has a less obvious effect on student learning than feedback for learning or as learning. Students do, however, rely on their marks and on teachers' comments as indicators of their level of achievement, and to make decisions about their future learning endeavours.

*Assessment Planning Summary*

The following chart summarizes assessment planning regarding the three purposes of assessment: assessment *for*, *of*, and *as* learning. This chart provides information ranging from the reasons to assess, through ways to use the information from assessment.

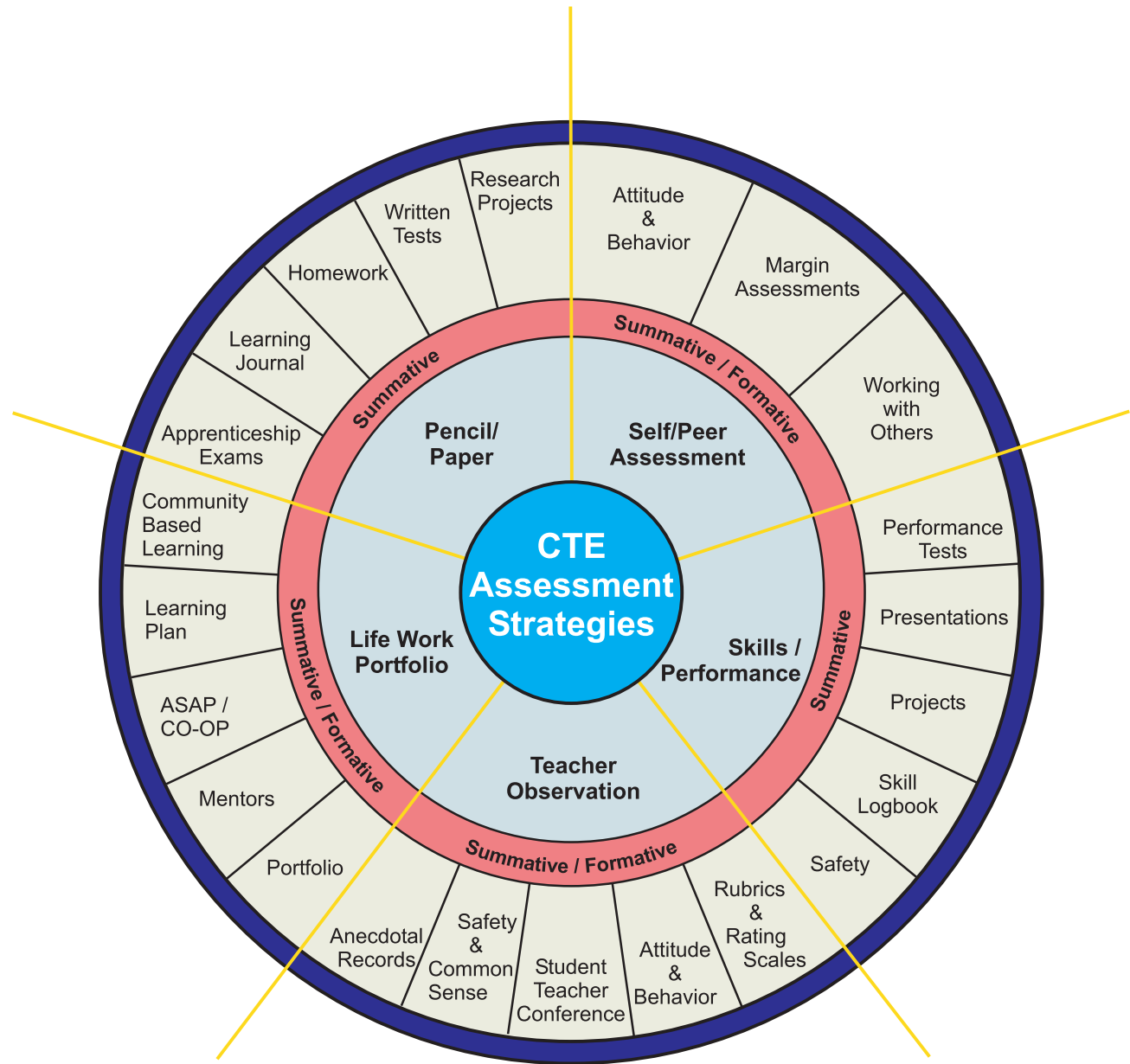
**Assessment Planning Summary**

	<i>Assessment for Learning</i>	<i>Assessment as Learning</i>	<i>Assessment of Learning</i>
Reason to Assess	<ul style="list-style-type: none"> <li>to enable teachers to determine next steps in advancing student achievement</li> </ul>	<ul style="list-style-type: none"> <li>to guide and provide opportunities for active participation from students to monitor and critically reflect on their learning, and identify next steps</li> </ul>	<ul style="list-style-type: none"> <li>to certify or inform parents or others of student's proficiency relative to learning outcomes</li> </ul>
What to Assess	<ul style="list-style-type: none"> <li>each student's progress and learning needs in relation to the curriculum outcomes</li> </ul>	<ul style="list-style-type: none"> <li>each student's thinking about his or her learning, strategies he or she uses to support or challenge that learning, and mechanisms he or she uses to adjust and advance learning</li> </ul>	<ul style="list-style-type: none"> <li>the extent to which students can apply the key concepts, knowledge, skills, and attitudes related to the curriculum outcomes</li> </ul>
Methods to Use	<ul style="list-style-type: none"> <li>a range of methods in different modes that make students' skills and understanding visible</li> </ul>	<ul style="list-style-type: none"> <li>a range of methods in different modes that elicit students' learning and metacognitive processes</li> </ul>	<ul style="list-style-type: none"> <li>a range of methods in different modes that assess both product and process</li> </ul>
Ensuring Quality	<ul style="list-style-type: none"> <li>accuracy and consistency of observations and interpretations of student learning</li> <li>clear, detailed learning expectations</li> <li>accurate, detailed notes for descriptive feedback to each student</li> </ul>	<ul style="list-style-type: none"> <li>accuracy and consistency of student's self-reflection, self-monitoring, and self-adjustment</li> <li>engagement of the student in considering and challenging his or her thinking</li> <li>personal record of student's own learning</li> </ul>	<ul style="list-style-type: none"> <li>accuracy, consistency, and fairness of judgments based on high-quality information</li> <li>clear, detailed learning expectations</li> <li>fair and accurate summative reporting</li> </ul>
Using the Information from Assessment	<ul style="list-style-type: none"> <li>provide each student with accurate descriptive feedback to further his or her learning</li> </ul>	<ul style="list-style-type: none"> <li>provide each student with accurate descriptive feedback that will help him or her develop independent learning habits</li> </ul>	<ul style="list-style-type: none"> <li>indicate each student's level of learning</li> <li>provide the foundation for discussions on placement or promotion</li> </ul> <p style="text-align: center;">(continued on next page)</p>



	Assessment <i>for</i> Learning	Assessment <i>as</i> Learning	Assessment <i>of</i> Learning
Using the Information from Assessment (continued)	<ul style="list-style-type: none"> <li>• differentiate instruction by continually checking where each student is in relation to the curriculum outcomes</li> <li>• provide parents or guardians with descriptive feedback about student learning and ideas for support</li> <li>• make comparisons between the curriculum expectations and the continuum of learning for individual students, and adjust instruction, grouping practices, and resources</li> <li>• provide students with material, support, and guidance needed to progress</li> <li>• decrease misunderstandings to provide timely support for the next stage of learning</li> </ul>	<ul style="list-style-type: none"> <li>• have each student focus on the task and his or her learning (as opposed to getting the right answer)</li> <li>• provide each student with ideas for adjusting, rethinking, and articulating his or her learning</li> <li>• provide the conditions for the teacher and student to discuss alternatives</li> <li>• provide opportunities for students to report their learning</li> <li>• allow students to practise their own Metacognitive skills of self-reflection, self-analysis, interpretation, and reorganization of knowledge (students are able to direct their own learning when these skills become well developed)</li> <li>• provide conditions under which students and Teachers can discuss what students are learning, what it means to do well, what the alternatives might be for each student to advance his/her learning, what personal goals have been reached, and what more challenging goals can be set</li> </ul>	<ul style="list-style-type: none"> <li>• report fair, accurate, and detailed information that can be used to decide the next steps in a student's learning</li> <li>• require that the necessary accommodations be in place that allow students to make particular learning visible</li> <li>• offer multiple forms of assessment so that student learning is transparent to the teacher</li> <li>• have a profound effect on the placement and promotion of students and, consequently, on the nature and differentiation of the future instruction and programming that students receive</li> </ul>

# CTE Assessment Strategies Graphic



---

## Skills Performance

This curriculum encourages learning through active participation. Many of the curriculum outcomes found in the guide promote core technical skills, Essential and Employability Skills, and their application. There is a balance between processes and content. In order that students appreciate the importance of skill development, it is important that assessments provide feedback on skill development throughout the program. Teachers and students should both be provided opportunities to reflect on the students' technical skill and Essential Skill development throughout the course.

## High School Skill Logbook

*The High School Skill Logbook* is an integral part of any Career and Technical Education Portfolio. The Skill Logbook is a means by which students can reflect on their learning and teachers can provide feedback on students' progress relative to the specific curriculum outcomes and the National Occupational Analysis tasks and sub-tasks related to the course (when available).

*The High School Skill Logbook is intended to be managed and built by the students.*

## Performance Tests

*Performance tests* are for tasks that involve technical skills. Teachers may use performance tests to determine whether a student understands a fundamental concept and can complete the task at hand. For example, the teacher may provide ingredients and ask the student to design a meal menu. This task requires that the student understands how to prepare the ingredients and can create a meal menu as representation of the concept. A simple checklist or a rating scale could be a valuable tool for recording the teacher's observations of the student's performance.

## Projects

*Projects* include hands-on practical activities and jobs performed in the CTE facility, research projects, and activities done individually or as group endeavours. Projects are particularly useful for evaluating cognitive skills, technical skills, and cooperative group skills.

## Presentations

The CTE curriculum includes outcomes that require students to analyse and interpret information, identify relationships, to work in teams, critically reflect on learning, and communicate information. Many of these activities are best displayed and assessed through *presentations*, which can be given orally, in written/pictorial form, by project summary, or by using electronic media. It is important to consider the curriculum outcomes as a guide to assessing presentations.

## Safety

*Safety* when working on projects or tasks is an essential component of any Career and Technical Education assessment. Students are required to observe and adhere to safety guidelines and regulations when working in the CTE facility. Teachers and students should both be provided opportunities to reflect on the students' attention to safety throughout the course.

---

## **Pencil/Paper Learning Journal**

*A learning journal* is a valuable tool for a student to use to record and document his/her learning. Although not assessed in a formal manner, journals provide opportunities for students to express thoughts and ideas, and to reflect on their transferable skills. By recording perceptions of success and responses to new concepts, a student may identify his or her most effective learning style and skills. Knowing how to learn in an effective way is powerful information.

The Learning Journal entries also give indicators of students' developing attitudes toward concepts, processes, and skills, and suggest how these may be applied in the contexts of the labour market and society. Self-assessment through a journal permits a student to consider strengths and weaknesses, attitudes, interests, and transferable skills. Developing patterns may help the student choose an appropriate career path.

## **Written Tests**

*Written tests* include objective questions, extended response, and/or subjective questions, and are often used to determine the student's achievement in the theoretical content of the course. Care must be taken to ensure that questions are constructed in a manner that reflects the presentation mode of the content as well as the reading level of the students.

## **Homework**

*Homework* provides an effective means to model classroom practice. Homework might involve seeking community input, constructing a model, preparing a group presentation, or answering questions for assessment purposes.

*Homework is an essential component of a program as it extends the opportunity to think and reflect on ideas investigated during class time.*

Meaningful homework experiences can allow students to learn self-discipline and team responsibility while acquiring a sense of self-worth. Teachers use their professional judgment to assign homework for reinforcement, assessment, and/or further investigation. Homework is another means for parents and guardians to be involved and to understand the focus of their child's education in a specific subject area. In some cases, it offers an opportunity for parents and guardians to become actively involved in the homework process.

---

## Teacher Observation

*Teacher observation* is a method of gathering information quickly while a lesson is in progress. When used formally, the student would be made aware of the observation and the criteria being assessed. Informally, it could be a frequent, but brief, check on a given criterion. Observation may offer information about the participation level of a student in a given task or his/her application of a given process. The results may be recorded in the form of checklists, rating scales, or brief written notes. Planning is important to ensure that specific criteria are identified, suitable recording forms are ready, and all students are observed in a reasonable period of time.

## Checklists

*Checklists* are useful for the assessment of the technical process skills (preparing ingredients, executing a recipe) or skills such as using a particular piece of equipment. In these situations there are specific practices, knowledge, and behaviors which are considered essential. The disadvantage of the checklist is that it can only indicate success or failure and not degrees of success.

## Rubrics & Rating Scales

*Rubrics and rating scales* can be used in the same way as checklists except that rating scales have the added advantage of allowing the evaluator to indicate degrees of success. The strength of rubrics is that they clarify expectations and ensure that student creations are judged on common criteria. One of the greatest strengths of a rubric comes when it has been co-created with students prior to the assigned task. This helps to ensure that the students truly understand what the task is and what the expectations are. Rubrics also provide students with information and direction for the future.

Here are some suggestions for creating rubrics:

- Involve the students in the process.
- Try to avoid or limit the use of words and phrases such as “very,” “often,” “sometimes,” and “to a great extent” because they are hard to qualify.
- Limit the number of criteria. It is difficult for students to focus on more than three to five items at once. It may be necessary to reduce this number for individual students in the class.
- Consider the range of descriptors that are provided: three is a minimum, five a maximum.
- Decide whether certain criteria require only two descriptors (this may be necessary if a criterion is simply met or not, with no range in between).
- Decide whether some criteria are more important than others. If this is the case, you may want to weight these criteria more heavily, especially if grades are being assigned as a result of the rubric.
- Use student work samples to generate criteria and descriptors. Share three to five samples of student work that range from “not yet within expectations” to “exceeds expectations.” Have students examine them and build the rubric with these in mind.

---

## **Anecdotal Records**

*Anecdotal records* can be used to record the many informal observations made by teachers. Anecdotal records can provide information which is either not available or very difficult to obtain through other means. Teachers prepare charts containing the students' names, the date, and the type of progress observed. At the end of an activity, observations may be shared with students and ways to improve an activity may be discussed. Recording the results of these discussions provides teachers with guidelines to assess the effectiveness of the learning activities.

## **Student-Teacher Conference**

A *student-teacher conference* is an effective method by which to gather information on a one-to-one basis where the student will be able to share knowledge of content, skills, competencies, and attitudes. The conference may provide information that would be hard to identify by more traditional assessment. Conferences can be formal or informal; however, a written record should be kept.

## **Self/Peer-Assessment**

Students need to be aware of their own technical skill development, strengths, weaknesses, and attitudes. Students can engage in simple self-evaluation techniques which draw their attention to their own learning. Self-evaluation can be used to gauge a student's impressions about his/her achievement of specific knowledge and technical skills.

---

## Margin Assessments

Students need to be aware of their own technical skill development, strengths, weaknesses, and attitudes. Students can engage in simple self-evaluation techniques which draw their attention to their own learning. Self-evaluation can be used to gauge a student's impressions about his/her achievement of specific knowledge and technical skills.

*A margin assessment* is an excellent tool for students to use to reflect on, comment on, and assess their own work. Students place their work (or image of their work, if size is an issue) on a large piece of paper so that there is a margin surrounding the work (approximately 3 cm). Students then reflect on their work—the materials and tools used, the challenges and successes, what they liked and disliked, and what if anything they would do differently. This also works well as a collaborative tool for peer/group-assessment.

A variation of a margin assessment in the event that a project is too large (buffet service, inventory control, etc.) is to give the student a set of sticky notes and have them comment on specific components of the project and attach the note to it. This works well as a peer/group-assessment strategy.

## Life Work Portfolio

*A Student Life Work Portfolio* offer another option for assessing student progress in meeting curriculum outcomes over a more extended period of time. *Portfolio* outcomes are embedded throughout the grade 7-9 Health curriculum. Students develop practical skills directly related to further education, job seeking, and career path exploration. This form of assessment allows the student to be central in the process. There are decisions about the portfolio and its contents which can be made by the student. What is placed in the portfolio, the criteria for selection, how the portfolio is used, how and where it is stored, and how it is evaluated are some of the questions to consider when planning to collect and display student work in this way.

The portfolio should provide a long-term record of growth in learning and skills. This record of growth is important for individual reflection and self-assessment, but it is also important to share with others. For many students it is exciting to review a portfolio and see the record of development over time.

Encouraging the local community and businesses to become involved in the classroom helps to extend the learning beyond the classroom walls and brings relevance to the classroom experience. By encouraging feedback from mentors and other community partners, we provide students with constructive information and an example of lifelong learning. Programs such as Cooperative Education and Accelerated Secondary Apprentice Program (ASAP) are excellent ways by which students can extend their CTE experience beyond the classroom. Inviting professionals into the classroom to provide feedback on student projects is another valuable way to enhance the assessment. For example, a local chef can be invited in to assess and provide feedback on a meal service.

---

## Learning Plan

An individualized *learning plan* identifies the skills students currently have, as well as those skills they will further develop. The learning plan will help the student, teacher, and potential employer to evaluate the learning that has occurred, and will facilitate a smooth transition for the student to the labour market or to post-secondary education.

## Interviewing

The CTE curriculum promotes the understanding and application of concepts. *Interviewing* a student allows the teacher or potential employer to confirm that learning has taken place beyond simply factual recall. Discussion allows a student to display an ability to use information and clarify understanding. Interviews may be brief discussions between teacher and student, or they may be more extensive and include student, parent or employer and teacher. Such an interview allows a student to be proactive in displaying understanding. It is helpful for students to know which criteria will be used to assess formal interviews. This assessment technique provides an opportunity for students whose verbal presentation skills are stronger than their written skills.





Education and Early  
Childhood Development  
English Programs

# Prince Edward Island Technology Education Curriculum

## Career and Technical Education

Foods and Nutrition  
**FDS421A**

# CURRICULUM

**This page has intentionally been left blank.**

**FDS421A**  
**Rigor and Relevance Analysis**

## Foods and Nutrition Science 421A Rigor and Relevance Analysis

The information is designed to provide clarity as to the nature of the intended outcomes for the given courses, and for the teacher to find a balance between content and application.

### Defining Rigor (Knowledge Taxonomy)

Rigor refers to academic rigor—learning in which students demonstrate a thorough, in-depth mastery of challenging tasks to develop cognitive skills thought, analysis, problem-solving, evaluation, or creation. Rigorous learning can occur at any school grade and in any subject. (International Center for Leadership in Education)

Rigor Curriculum Map – Foods and Nutrition FDS421A					
	Knowledge Dimension	Factual	Conceptual	Procedural	Meta-cognitive
Cognitive Processes					
Remembering					
Understanding			<i>F.2, F.3</i>		
Applying			<i>D.1</i>	<i>C.1, C.2, D.2, D.3, D.4</i>	
Analyzing			<i>A.1, E.1, E.2, F.1</i>	<i>G.1, G.2</i>	
Evaluating				B.1	
Creating				E.3	

# Foods and Nutrition Science 421A Rigor and Relevance Analysis

## Defining Relevance (Application Taxonomy)

Relevance refers to learning in which students apply core knowledge, concepts, or skills to solve real-world problems. Relevant learning is interdisciplinary and contextual. Student work can range from routine to complex at any school grade and in any subject. Relevant learning is created, for example, through authentic problems or tasks, simulation, service learning, connecting concepts to current issues, and teaching others. (International Center for Leadership in Education)

<b>Knowledge Taxonomy (Rigor)</b>	<i>Creating</i>	6				<i>E.3</i>	
	<i>Evaluating</i>	5		<i>C</i>		<i>B.1</i>	<i>D</i>
	<i>Analyzing</i>	4	<i>E.1, E.2</i>	<i>Assimilation</i>	<i>A.1</i>	<i>F.1, G1, G2</i>	<i>Adaptation</i>
	<i>Applying</i>	3		<i>C.2, D.2</i>	<i>D.1</i>	<i>C.1, D.3,</i> <i>D.4</i>	
	<i>Understanding</i>	2		<i>A</i>		<i>F.2, E.3</i>	
	<i>Remembering</i>	1		<i>Acquisition</i>		<i>Application</i>	
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
			<i>Knowledge in one Discipline</i>	<i>Apply in Discipline</i>	<i>Apply across Disciplines</i>	<i>Apply to real-world predictable situations</i>	<i>Apply to real-world unpredictable situations</i>
<b>Application Model (Relevance)</b>							

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Career Awareness	CUL801A	CUL801B
<b>SCO</b> <b>A.1 Analyse skills and knowledge required for successful employment in food-related occupations.</b>	<b>SCO</b> A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.	<b>SCO</b> A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the major sectors of the economy and industry groups within the economic sectors connected to food-related occupations and career pathways (e.g., tourism, health, agriculture, retail).
- Identify jobs or occupations within industry groups in foods related occupations and careers (e.g., dietician, cook, chef, nutritionist, food writer, food scientist, farm worker, food producers, server).
- Explain the connections between sectors, industry groups, and occupations.
- Identify the four career pathways describe occupations that can be obtained through each pathway (e.g., university, college, apprenticeship, and work).
- Examine skills and knowledge required for employment in food-related occupations (e.g., Employability Skills, Essential Skills).
- Analyse labor market information to determine employability outlook in food-related occupations.
- Analyse food-related occupations in relationship to the knowledge and skills expected for employment .
- Explain techniques used to communicate and document skills and knowledge to employers (e.g., portfolios, e-portfolio, logbooks, personal recipe books, reflective journals).

## Elaboration

It is important for students to develop an understanding of the wide range of career pathways, occupations, and jobs in related to food service. Students should explore the types of opportunities available in the Tourism, Health, Agriculture, and Retail sectors of the economy.

Students should identify industries within the sectors and related occupations and jobs that relate specifically to food and nutrition. (e.g., the five industry groups of the Tourism Sector: food and beverage service, accommodations, recreation and entertainment, transportation, and travel services).

Students should be able to discuss with their peers, industry representatives and educators the career opportunities in foods related occupations (e.g., dietician, cook, chef, nutritionist, food writer, food scientist, farm worker, food producers, server) and analyse labor market information in food-related occupations to determine employability opportunities (local, regional, national, global). This will require students to research, collect data, and analyse the data to support their findings.

Job profiles (job profiles should include information related to job duties, working conditions, expected salary, and education requirements) for a variety of food-related occupations can be found from such documents and sources as

- Conference Board of Canada - Employability Skills
- Human Resources Service Development of Canada (HRSDC) - Essential Skills
- Occupational Analyses Series (HRSDC)
- National Occupational Classification (HRSDC)

This research and analysis will allow students to gain a clearer understanding of the knowledge and skills expected for employment in food-related occupations.

Students should understand the four career pathways which are university, college, apprenticeship, and work and make connections to the occupations obtained through each pathway in food services.

These sources will support students as they begin to identify connections between their personal skills and requirements for employment in food-related occupations.

**Please Note** - It is expected that the learning identified in outcome A.1 under the topic Career Awareness be integrated to ensure students continually make connections between the following:

- needs of industry
- educational opportunities
- personal skills and interests

# C FDS421A

## Career & Technical Education

### Foods & Nutrition

FDS421A - Meal Service	CUL801A	CUL801B
<b>SCO</b> <b>B.1 Evaluate the preparation and execution of a small scale/family meal service.</b>	<b>SCO</b> B.1 Analyse the preparation and execution of a meal service (Second Course).	<b>SCO</b> B.1 Evaluate the preparation and execution of a meal service (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify and describe the types of meal service (e.g., modern American plated service, family-style service, butler service, buffet service).
- Apply knowledge of meal service by setting up and serving tables.
- Examine the components of a successful meal service (e.g., selection of recipes and ingredients, attention to detail in the preparation of the food, the setup of the dining environment, the plating and presentation of the food).
- Critique the preparation and execution of a small scale meal service.



## Elaboration

*“A table full of local flavor and creative energy is one of life’s great miracles. There are few things as powerful and rewarding as cooking a simple meal then sharing it with your family and friends, especially when you enjoy the act of creation.” ~ Chef Michael Smith, The Best of Chef at Home, (2009)*

For students to evaluate a small scale meal service, they must acquire some foundational knowledge around factors which make a meal service successful. These factors range from the selection of recipes and ingredients, attention to detail in the preparation of the food, the setup of the dining environment, and the plating and presenting the food.

The intention of this outcome is to keep the meal service focused on a small scale meal service such as would be served to family and friends. Some examples of styles of meal service suitable for small scale service are: modern American plated service; family-style service; butler service; buffet service. Students should be familiar with a variety of meal services and how best to set up the dining environment (e.g., table settings, service of food) for a successful service.

Whenever students are preparing, cooking, and/or serving food it is important they practice and develop high quality skills related to the following topics.

- Communication Skills (e.g., teamwork, positive attitude)
- Personal hygiene
- Personal health
- Personal attire

Students are expected to be honest and critical of their work, and should be provided time to reflect on both the positive and negative experiences they have in the kitchen when preparing and serving meal services.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen and Food Safety.

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Kitchen and Food Safety	CUL801A	CUL801B
<b>SCO</b> <b>C.1 Apply safe food handling, storage and preparation methods.</b>	<b>SCO</b> C.1 Evaluate safe food handling, storage and preparation methods.	<b>SCO</b> C.1 Evaluate safe food handling, storage and preparation methods.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Explain the basic microbiology involved in food spoilage.
- Identify the causes of food contamination (e.g., chemicals, pesticides, dirt, hairs).
- Identify food-borne illnesses (e.g., food poisoning, food infection, food intoxication, food allergies).
- Identify the causes of food-borne illnesses: pathogens (e.g., bacteria, parasites, fungi, viruses, molds), and toxins.
- Describe the common bacteria that contaminate food (e.g., Clostridium botulism, E coli, campylobacteriosis, listeria, salmonella, staphylococcus).
- Explain the factors contributing to food contamination (e.g., temperature, time, best before dating, shelf life, acidity (ph), moisture, sanitation, hygiene, food sources).
- Apply safe food handling and storage methods (e.g., four steps to food safety, cleaning and sanitizing).
- Apply high standards regarding personal hygiene for safe food handling and preparation. (e.g., hand washing, personal protective equipment).

## Elaboration

In identifying the causes of food spoilage and contamination, students need to be able to explain the basic microbiology involved in food spoilage and identify food contaminants (e.g., chemicals, pesticides, dirt, hairs). By basic microbiology we mean the spontaneous, undesirable changes in the food structure that render the food unacceptable for consumption.

When dealing with food-borne illness address the following topics:

- Identify food-borne illnesses (e.g., food poisoning, food infection, food intoxication, food allergies)
- Identify the causes of food-borne illnesses: pathogens (bacteria, parasites, fungi, viruses, molds), and toxins
- Describe the common bacteria that contaminate food (e.g., clostridium botulism, E coli, campylobacteriosis, listeria, salmonella, staphylococcus)

When explaining the factors that contribute to food contamination address the following topics: temperature, time, best before dating, shelf life, acidity (ph), moisture, sanitation, hygiene, food sources.

It is important for students to understand the following terms when learning about food contamination:

- sanitary - a clean healthy environment
- contamination - when undesirable or harmful organisms or substances are present in food
- direct contamination - when raw foods, plants or animals, are exposed to harmful toxins or organisms in their environment
- cross-contamination - movement of harmful organisms or substances from one place to another (human factor)
- bacteria - single cell microorganisms
- viruses - an infection or disease caused by infective agent that typically consists of a nucleic acid molecule in a protein coat
- parasites - live in a host
- fungi/molds.

When practicing safe food handling students should be able to implement the four steps to food safety (e.g., clean, separate, chill, cook) and be able to address causes of food spoilage and contamination while working in the kitchen. They should also be able to clean and sanitize food preparation areas and equipment as well as wash foods to remove pesticides, residues, insects, waxes and other contaminants.

It is important for students to practice personal hygiene at all times when preparing and handling food. This should include the following:

- following proper hand washing procedures
- wearing appropriate clothing and following jewelry and cosmetics guidelines
- taking precautions for preventing hair in food
- following requirements for personal protective equipment (e.g., shoes, aprons, gloves, heat protection)
- taking responsibility for personal illness, coughing and sneezing.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen Basics

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Kitchen and Food Safety	CUL801A	CUL801B
<b>SCO</b> <b>C.2 Apply appropriate precautionary measures associated with food preparation.</b>	<b>SCO</b> C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Second Course).	<b>SCO</b> C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Third Course).

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Apply proper posture and ergonomic techniques when working in the kitchen.
- Locate safety features in the kitchen (e.g., personal protective equipment (PPE), first aid kits, fire and evacuation routes, emergency power shut off and other related safety features of the kitchen and classroom).
- Use kitchen tools and equipment safely (e.g., to prevent fires, electrical shocks, cuts, steam scalds, burns from hot oil, uneven microwave heating).
- Demonstrate the ability to handle hot foods appropriately (e.g., proper lid-lifting and sauce pan-lifting techniques, spatter and scalding protection, cooling racks/mats).
- Recognize emergency situations (e.g., fires, burns, cuts).
- Understand correct response procedures (e.g., alert appropriate authority, apply basic first aid, use appropriate fire suppression methods).
- Identify the eight WHMIS symbols (e.g., Compressed Gas, Flammable and Combustible Material, Oxidizing Material, Poisonous and Infections Material Division 1, Poisonous and Infections Material Division 2, Poisonous and Infections Material Division 3, Corrosive Material, Dangerously Radioactive Material).

## Elaboration

When applying appropriate measures and emergency response associated with food preparation this includes the following:

- handling equipment and hot foods safely (e.g., to prevent fires, electrical shocks, cuts, steam scalds, burns from hot oil, uneven microwave heating)
- knowing where to locate personal protective equipment (PPE), first aid kits, fire and evacuation routes, emergency power shut off and other related safety features of the kitchen and classroom
- using kitchen tools and equipment safely (e.g., appropriate use of kitchen appliances, stoves, microwaves, knives, cutting boards)
- using safe techniques when handling hot foods (e.g., proper lid-lifting and sauces pan-lifting techniques, spatter and scalding protection, cooling racks/mats)
- recognizing emergency situations (e.g., fires, burns, cuts)
- following correct response procedures in the event of an emergency (e.g., alert appropriate authority, apply basic first aid, use appropriate fire suppression methods)
- identifying the eight WHMIS hazard symbols (students must recognize and interpret these symbols)

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen Basics

# C FDS421A Career & Technical Education

---

*Foods & Nutrition*

FDS421A - Kitchen Basics	CUL801A	CUL801B
<b>SCO</b> <b>D.1 Demonstrate kitchen organization and collaboration in partner and group work, including integration of planning skills</b>	<b>SCO</b> D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Second Course).	<b>SCO</b> D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Third Course).

## Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate essential work ethics (e.g., punctuality, preparedness, positive attitude, respect, eagerness to learn, dedication to quality, collaboration with others).
- Explain the importance of work flow (e.g., kitchen lines, mise-en-place).
- Describe a basic food inventory.
- Apply appropriate inventory procedures to manage stock effectively (e.g., expiry dates, first in first out (FIFO)).
- Collaborate among group members, assisting others in group when necessary with teacher support (e.g., plan, organize, and share tasks).

## Elaboration

*“The emphasis of a food service education is on learning a set of skills. But in many ways, attitudes are more important than skills because a good attitude will help you not only learn skills but also persevere and overcome the many difficulties you will face. ... Food service work is teamwork, and it’s essential to be able to work well on a team and to cooperate with our fellow workers.”*  
~ *Professional Cooking for Canadian Chefs (Gisslen 2011)*

The purpose of this outcome is for students to begin to develop the knowledge and skills necessary to be an effective member of a food service team. This will range from an understanding of the work flow of a kitchen and inventory control to teamwork, and work ethics.

Below is a list of essential work ethics for students to develop

- punctuality
- preparedness
- positive attitude
- respect
- eagerness to learn
- dedication to quality
- collaboration with others

For students to plan, organize, and share tasks among group members they will need to develop their knowledge and skills in the following:

- the types of kitchen lines
- the importance of work flow (mise-en-place)
- the items required for a basic kitchen food inventory and the concept of First in First Out (FIFO) inventory control

# C FDS421A Career & Technical Education

---

## Foods & Nutrition

FDS421A - Kitchen Basics	CUL801A	CUL801B
<b>SCO</b> <b>D.2 Analyse and execute a recipe using appropriate equipment and measuring techniques.</b>	<b>SCO</b> D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Second Course).	<b>SCO</b> D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Third Course).

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Recognize the accuracy of a recipe (e.g., correct ingredients and quantities, accurate cooking times).
- Convert recipes to adjust yield (e.g., metric to imperial, doubling a recipe, halving a recipe).
- Demonstrate an understanding of cooking terminology and techniques described in recipes.
- Apply proper measuring techniques to specific recipes.



## Elaboration

*“Recipes are important tools in the culinary profession. ... a recipe is a precise set of directions for using ingredients, procedures, and cooking instructions for a certain dish. Following instructions and measuring ingredients accurately results in a consistent quality production of the same quantity every time it is prepared.” ~ Culinary Essentials (2004)*

The purpose of this outcome is for students to develop their skills reading, interpreting and adjusting recipes. In order to do this effectively, students should gain experiences in the following areas:

- recognizing the accuracy of a recipe (e.g., correct ingredients and quantities, accurate cooking times)
- converting recipes to adjust yield (e.g., metric to imperial, doubling a recipe, halving a recipe)
- understanding cooking terminology and techniques described in recipes

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen Basics

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Kitchen Basics	CUL801A	CUL801B
<b>SCO</b> <b>D.3 Demonstrate competence when using a variety of kitchen tools and equipment for preparing foods.</b>	<b>SCO</b> D.3 Compare various types of equipment used for food preparation (Second Course).	<b>SCO</b> D.3 Evaluate new technologies available for food preparation (Third Course).

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify specific kitchen tools and equipment required to prepare selected recipes
- Use kitchen tools and equipment safely
- Maintain and store kitchen tools and equipment properly

## Elaboration

This outcome is a **performance outcome** and require the students to work with a variety of kitchen tools and equipment when preparing food. Students should be assessed on an on-going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to identification, use and maintenance of kitchen tools and equipment.

For students to demonstrate the ability to use a variety of kitchen tools and equipment when preparing foods they must be guided and assessed on the following concepts for each tool or piece of equipment they are required to use to successfully prepare a recipe or execute a menu.

- Tool identification, description, and use
- General tool and equipment safety
- Specific safety requirement for particular tools and/or equipment
- Proper maintenance, including storage and handling of each tool or piece of equipment used.

# C FDS421A

## Career & Technical Education

---

### Foods & Nutrition

FDS421A - Kitchen Basics	CUL801A	CUL801B
<b>SCO</b> <b>D.4 Demonstrate effective knife skills.</b>	<b>SCO</b> D.4 Demonstrate effective knife skills.	<b>SCO</b> D.4 Demonstrate effective knife skills.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the types and components of kitchen knives (e.g., the parts of a standard chef knife, a variety of types of knife blades, a variety of types of knives and specialty knives).
- Demonstrate general knife safety practices.
- Apply appropriate techniques when using knives (e.g., trimming, peeling, dicing, chopping, mincing).
- Demonstrate the ability to properly clean and store knives.

## Elaboration

*“The importance of knives to a professional chef or cook cannot be overstated. ... The perfect knife depends on a variety of factors. The knife should fit your hand, feel substantial but not heavy, and should be well balanced.” ~ In the Hands of a Chef (2008)*

This outcome is a **performance outcome** and will require the students to work with a variety of kitchen knives to prepare food. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their knife skills.

Student’s knowledge of knives should focus on the following:

- the parts of a standard chef knife
- a variety of types of knife blades
- a variety of types of knives and specialty knives
- general knife safety

Students should begin to develop basic skills in using knives by focusing on the following:

- applying appropriate cutting techniques (e.g., trimming, peeling, dicing, chopping, mincing)
- properly cleaning, sharpening, and storing knives

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Nutrition and Food Science	CUL801A	CUL801B
<b>SCO</b> <b>E.1 Examine the science of nutrition.</b>	<b>SCO</b> E.1 Analyse healthy balanced food service menus for a variety of dietary and budget considerations.	<b>SCO</b> E.1 Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the six categories of nutrients (e.g., carbohydrates, proteins, fats, vitamins, minerals, and water).
- Describe the functions and food sources of these nutrients.
- Explain how your body uses the nutrients in food you eat (digestion, absorption, metabolism; calories in/calories out).
- Examine the causes and consequences of nutritional excesses and deficiencies.
- Analyse how Canada's Food Guide translates the science of nutrient requirements into a practical pattern of food choices including recommended daily allowances of food.

## Elaboration

The purpose of this outcome is for students to examine the science of nutrition. This will require students to develop an understanding of the six categories of nutrients (e.g., carbohydrates, proteins, fats, vitamins, minerals, and water). They will also need to explain the functions and food sources of nutrients as well as the consequences of nutritional excesses and nutritional deficiencies.

Students will need to explain how the body uses the nutrients in food by understanding the following: digestion, absorption, metabolism; calories in/calories out.

Student will use Canada's Food Guide. This resource is referenced throughout the curriculum and it is important for students to be able to analyse Canada's Food Guide when planning menus and to examine how Canada's Food Guide translates the science of nutrient requirements into a practical pattern of food choices. The following should be covered:

- the history and purpose of Canada's Food Guide
- the four basic food groups and how they are interpreted in different regions of Canada and for different cultures
- how to use the guide "Eating Well With Canada's Food Guide"
- the key nutrients in each food group
- the recommended daily servings of each food group based on age, gender, and activity level
- other food guides that support healthy eating
- the contribution of the key nutrients from each food group
- nutrition labelling
- the concept of recommended daily intake (RDI).

Information on Canada's Food Guide can be found on Health Canada's Web site <http://www.hc-sc.gc.ca/>.

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Nutrition and Food Science	CUL801A	CUL801B
<b>SCO</b> <b>E.2 Analyse the relationship of nutrition to health and well being.</b>	<b>SCO</b> E.1 Analyse healthy balanced food service menus for a variety of dietary and budget considerations.	<b>SCO</b> E.1 Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Explain how nutritional needs change throughout life (e.g., infant, child, teen, adult, pregnancy, seniors).
- Explain the relationship between nutrition and health issues.
- Analyse the nutritional aspects of special dietary needs (e.g., medical needs, personal choice).
- Analyse how Canada's Food Guide connects nutrition to health and well being.



## Elaboration

The purpose of this outcome is to have students examine the relationship between nutrition and health and wellness. Students will need to understand how nutritional needs change thorough the stages of a persons life (e.g., infant, child, teen, adult, pregnancy, seniors) and be able to apply the knowledge from Canada’s Food Guide to meet the nutritional needs.

To explain the relationship between nutrition and health issues, students should study the following topics:

- factors contributing to personal wellness (e.g., food habits, food choices, exercise and fitness level, weight maintenance, Body Mass Index (BMI), blood pressure, stress, sleep, medical checks)
- factors that contribute to a healthy lifestyle (e.g., physical, psychological, social, spiritual, financial)
- lifestyle choices that will lead to health problems (e.g., diet high in sugar and/or saturated fats, fast foods, lack of exercise, poor sleep habits, ignoring health issues, drug use, alcohol abuse, tobacco abuse)
- how food habits and other lifestyle choices impact the risk factors associated with a variety of health problems (e.g., heart disease, cancer, diabetes, eating disorders, obesity, arthritis, osteoporosis)
- methods to improve nutritional and other lifestyle choices (e.g., balanced meals, appropriate portion sizes, realistic exercise and weight goals)

The term “special dietary needs” refers to two main categories:

- special dietary needs reflecting personal choice (e.g., ethnic traditions, vegetarian/vegan lifestyles, diets for athletes)
- special dietary needs reflecting medical needs (e.g., celiac disease, food allergies, food sensitivities, heart disease, cancer, diabetes, eating disorders, obesity, osteoporosis)

Students should investigate the effects of special dietary needs on a person’s food choices and how these choices are informed and supported by recommendations within Canada’s Food Guide.

# C FDS421A

## Career & Technical Education

### Foods & Nutrition

FDS421A - Nutrition and Food Science	CUL801A	CUL801B
<b>SCO</b> <b>E.3 Create nutritious menus for a variety of dietary and budget considerations using <i>Eating Well with Canada's Food Guide</i>.</b>	<b>SCO</b> E.1 Analyse healthy balanced food service menus for a variety of dietary and budget considerations.	<b>SCO</b> E.1 Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Select recipes to meet nutritional needs.
- Interpret nutrition labels when selecting ingredients or food products.
- Plan a meal with consideration for special dietary needs.
- Create a budget and grocery list, complete with cost analysis.
- Design nutritious menus using *Eating Well with Canada's Food Guide*.

## Elaboration

The purpose of this outcome is to have students apply their knowledge of nutrition and food to plan and develop nutritious meals using Canada's Food Guide.

When planning nutritious meals students should:

- consult Canada's Food Guide to determine the daily food requirements
- source recipes to meet nutritional needs
- determine the required ingredients and quantities,
- create a budget and grocery list, complete with cost analysis

When working with Canada's Food Guide students should focus on:

- using Canada's Food Guide to plan nutritious meals
- identifying the four food groups
- determining the required daily servings within each food group
- selecting foods from each group to fulfill the daily requirements
- nutrition labels
- sourcing recipes to meet the nutritional needs

When planning menus students should:

- create daily and weekly menus which follow Canada's Food Guide
- create a menu planning chart
- source recipes to meet daily and weekly nutritional needs
- complete a cost analysis of the required food products

To plan meals or menus to meet special dietary needs students should apply their knowledge related to:

- special dietary needs reflecting personal choice (e.g., personal goals, vegetarian, vegan, professional goals)
- special dietary needs reflecting medical needs (e.g., celiac disease, food allergies, food sensitivities, heart disease, cancer, diabetes, eating disorders, obesity, arthritis, osteoporosis)

# C FDS421A Career & Technical Education

---

*Foods & Nutrition*

<b>FDS421A - Social, Environmental, &amp; Economic Influences</b>	<b>CUL801A</b>	<b>CUL801B</b>
<b>SCO</b> F.1 Analyse comparative costs and nutritional value of convenience, restaurant, and self-prepared foods.	<b>SCO</b> F.1 Analyse the effect of food marketing practices on consumer behavior. (Second Course).	<b>SCO</b> F.1 Create a marketing strategy for a food service or food product (Third Course).

## Achievement Indicators

*Students who have achieved this outcome should be able to*

- Select and examine criteria to compare food costs relating to convenience, restaurant, and self-prepared foods (e.g., time, family values, education, fuel costs, local food production, global food production, quality, availability).
- Compare convenience foods, restaurant foods, and self-prepared foods using the selected criteria.

## Elaboration

People and families are busy. Often it is more convenient to stop by a drive thru, or have a prepared frozen item for supper then to take the time needed to prepare a home cooked meal. There are a variety of factors contributing to this growing trend in our modern society (e.g., work, school, sports, and other extra-curricular activities). These factors, coupled with a growing lack of basic culinary skills and nutritional knowledge, can lead individuals and families to make decisions regarding food choices that may have a negative effect on both their health and their finances.

The purpose of this outcome is for students to analyse the comparative costs of convenience foods, restaurant foods, and home cooked meals. To accomplish this students will need to investigate a variety of factors that influence consumer choices, complete a cost analysis, and make recommendations for healthy food choices.

Some possible factors are listed below.

- Time: Finding/taking the time to shop and prepare meals
- Family values: Time with family preparing and sharing meals
- Education: Teaching yourself and your family the skill of cooking
- Fuel costs: Frequent trips to restaurant versus a weekly trip to grocery store
- Local production versus having your food transported from many miles away
- Quality: Taste, freshness and nutritional value of ingredients
- Local or global: Supporting your local farmer/processor versus the global market

# C FDS421A Career & Technical Education

---

## Foods & Nutrition

FDS421A - Social, Environmental, & Economic Influences	CUL801A	CUL801B
<b>SCO</b> <b>F.2 Identify factors that affect food production and food supply.</b>	<b>SCO</b> F.2 Evaluate food choices based on social, environmental, and economic factors	<b>SCO</b> F.2 Evaluate food choices based on social, environmental, and economic factors

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Describe factors that influence the production and supply of food (e.g., availability of foods, geography, climate, transportation, local economy).
- Describe various types of food production technologies and trends. (e.g., organic foods, corporate farming).

## Elaboration

The purpose of this outcome is for students to demonstrate an understanding of the factors contributing to food production, supply and demand.

Students will relate the production and supply of food to a variety of factors:

- weather
- production and fuel costs
- growing conditions
- local economy
- growing season
- geographic location

Students will need to describe various types of food production technologies and trends that can influence the production and supply of food.

Below is a list of various types of food production technologies and trends to consider:

- natural foods
- organic foods
- genetically modified foods
- corporate farming
- intensive agriculture
- fair trade
- processed foods

# C FDS421A Career & Technical Education

## Foods & Nutrition

<b>FDS421A - Social, Environmental, &amp; Economic Influences</b>	<b>CUL801A</b>	<b>CUL801B</b>
<b>SCO</b> F.3 Describe the cultural origins of recipes, ingredients, and meal etiquette of a variety of ethnic, regional, and local cuisines, as represented in Canada.	<b>SCO</b> F.3 Prepare a meal using foods and preparation methods from a particular culture	<b>SCO</b> F.3 Prepare a meal using foods and preparation methods from a particular culture

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify a variety of Aboriginal, ethnic, and cultural cuisines in Canada.
- Research ingredients, preparation techniques, and meal etiquette for a variety of ethnic, regional, and local cuisines (e.g., types of foods, permitted foods, cooking methods, styles of meal service, variety of seasonings and flavours).



## Elaboration

*“The more I learn about the history of food, the more I realize that one thing we should agree on with our ancestors is that good food is important; that it has always been essential. Festivals are identified by it, families are pulled together by it, it represents good times or bad times. I suppose what I am trying to say is that, historically, food has always had one of the most important places in the home, in the town, in our different cultures.” ~Chef Jamie Oliver, Cook With Jamie: My Guide to Making You a Better Cook (2006)*

The purpose of this outcome is for students to develop an awareness of the wide range of ethnic and cultural customs related to food that are present in Canada and their local communities.

Students should research and discuss the sources of food, the variety of food, and the preparation of foods for various cultures in Canada and around the world. Some examples are listed below:

- types of foods (e.g., staple foods, permitted foods)
- cooking methods
- styles of meal service (e.g., meal times, special occasions)
- variety of seasoning and flavours

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation. If students are preparing a meal using foods and preparation methods from a particular culture, this should be completed within the context of the learning described in the Food Preparation outcomes G.1 and G.2 and the Meal Service outcome described in B.1.

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Food Preparation	CUL801A	CUL801B
<b>SCO</b> <b>G.1 Prepare baked goods by applying baking principles.</b>	<b>SCO</b> <b>G.1. Prepare complex batter and dough recipes by applying baking principles</b>	<b>SCO</b> <b>G.1. Prepare baked goods.</b>

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the eight basic ingredient groups (e.g., flours and starches, liquids, fats, leavening agents, sugar, eggs, salt, flavourings).
- Examine the role of each basic ingredient and the interactions between ingredients when baking.
- Interpret recipes for baked goods (e.g., selection of ingredients, measurement techniques, baking terminology, ingredient preparation techniques, baking times).
- Prepare baked goods using a variety of ingredient preparation and measurement techniques.

## Elaboration

*“Bakers generally talk about formulas rather than recipes. ...The bakeshop is much like a chemistry laboratory both in scientific accuracy of all the procedures and in the complex reactions that take place during the mixing and baking.” ~Professional Cooking for Canadian Chefs (Gisslen 2011)*

The purpose of this outcome is to introduce the basic processes and ingredients common to nearly all baked goods.

The function of the eight common ingredients used in baking are:

- flours and starches (e.g., wheat, rye, soy, potato, corn, tapioca) — give structure to products, source of gluten, thickening agent for liquids
- liquids (e.g., water, milk, juices, eggs) — hydrate the protein and starch in flour dissolve ingredients, aids in leavening
- fats (e.g., butter, margarine, shortening, oils) — tenderizing agent in baking, aids in leavening, adds moisture, adds flavor
- leavening agents (e.g., carbon dioxide, baking soda, baking powder, steam, air) — produce gases in batters and doughs causing them to rise
- sugar (e.g., white, brown, sugar substitutes) — adds sweetness and flavor, weakens gluten to create tenderness, provides colour, retains moisture, acts as creaming agent
- eggs — colour and flavour, aids in leavening, provides structure, emulsification, nutritional value
- salt — flavour, controls growth of yeast, strengthens gluten structure
- flavourings — taste, aroma, texture

When students are reading and interpreting recipes used for baked goods they will need to know a variety of ingredient preparation and measurement techniques (e.g., volume measurement, weigh measurement, kneading, mixing).

**This outcome is a performance outcome** and will require the students to prepare baked goods and work with the tools, equipment, and ingredients needed for baking. Students should be assessed on an on-going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the measurement techniques and ingredient preparation methods used to produce baked goods.

The ability to accurately follow and execute a recipe to produce a product is an expectation for this outcome. Furthermore, students are also expected to analyse the methods, ingredients, and techniques described within recipes.

# C FDS421A Career & Technical Education

## Foods & Nutrition

FDS421A - Food Preparation	CUL801A	CUL801B
<b>SCO</b> <b>G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.</b>	<b>SCO</b> <b>G.2. Create nutritious and flavorful dishes using egg and dairy products by applying cooking principles.</b>	<b>SCO</b> <b>G.5. Create nutritious and flavorful dishes using fish, poultry and meat products by applying cooking principles.</b>

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify common foods in the following broad categories: eggs and dairy products; fish, poultry and meats; fruits and vegetables; pasta and grains.
- Examine the effect of heat on the nutritional value of common foods.
- Examine various methods of heat transfer (e.g., conduction, convection, radiation).
- Examine wet and dry cooking methods.
- Examine methods for building flavor in foods.
- Prepare healthy dishes and simple meals by applying cooking principles.

## Elaboration

*“No matter how carefully a recipe is written, the judgement of the cook is still the most important factor in a preparation turning out well. A cook’s judgement is based on experience, and an understanding of the raw materials available, and on a knowledge of basic cooking principles and food science.” ~ Professional Cooking for Canadian Chefs (Gisslen 2011)*

*“To cook food means to heat it in order to make certain changes in it. Skillful cooks know exactly what changes they want to make and what to do to get them right. To learn these cooking skills, it is important for you to know why foods behave as they do when heated.” ~ Professional Cooking for Canadian Chefs (Gisslen 2011)*

**This outcome is a performance outcome** and require the students to prepare meals and work with the tools, equipment, and ingredients needed for cooking. Students should be assessed on an on-going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the preparation of common foods.

Students will need to begin to develop an understanding of the effects of a variety of cooking methods on common foods and should consult Canada’s Food Guide and other sources (e.g., web sites, textbooks, articles) to determine the nutritional value of a variety of common foods. The common foods are describe in this curriculum by the following broad categories: eggs and dairy products; fish, poultry and meats; fruits and vegetables; pasta and grains.

For students to be able to apply cooking principles to prepare healthy dishes and simple meals they must be given the opportunity to prepare a variety of dishes and have time to experiment with various sources of heat, cooking methods, and ingredient preparation techniques.

To develop their knowledge of cooking methods students should consider the following:

- the definition and explanation of heat
- the impact heat on common foods and the six categories of nutrients (i.e., carbohydrates, proteins, fats, vitamins, minerals, water)
- methods of heat transfer (e.g., conduction, convection, radiation)
- methods of controlling heat
- moist cooking methods (e.g., poaching, simmering, boiling, steaming)
- dry cooking methods (e.g., baking, roasting, broiling, grill)
- dry-heat using fat (e.g., frying, saute, deep frying)
- other methods (e.g., microwave, cooking sous vide, molecular gastronomy)

The ability to accurately follow and execute a recipe to produce a product is an expectation for this outcome. Furthermore, students are also expected to analyse the methods, ingredients, and techniques described within recipes.





CANADA

Education and Early  
Childhood Development  
English Programs

# Prince Edward Island Technology Education Curriculum

## Career and Technical Education

Culinary Skills  
**CUL801A**

# CURRICULUM

**This page has intentionally been left blank.**



**CUL801A**  
**Rigor and Relevance Analysis**

## Culinary Skills 801A Rigor and Relevance Analysis

The information is designed to provide clarity as to the nature of the intended outcomes for the given courses, and for the teacher to find a balance between content and application.

### Defining Rigor (Knowledge Taxonomy)

Rigor refers to academic rigor—learning in which students demonstrate a thorough, in-depth mastery of challenging tasks to develop cognitive skills thought, analysis, problem-solving, evaluation, or creation. Rigorous learning can occur at any school grade and in any subject. (International Center for Leadership in Education)

Cognitive Curriculum Map – Culinary Skills CUL801A				
Cognitive Processes \ Knowledge Dimension	Factual	Conceptual	Procedural	Meta-cognitive
Remembering				
Understanding				
Applying		<i>C.2</i>	<i>D.4</i>	
Analyzing		<i>D.3, E.1, F.1</i>	<i>B.1, F.3, G.1</i>	
Evaluating		<i>F.2</i>	<i>C.1, D.2</i>	
Creating			<i>D.1, G.2, G.3, G.4</i>	<i>A.1</i>

# Culinary Skills 801A Rigor and Relevance Analysis

## Defining Relevance (Application Taxonomy)

Relevance refers to learning in which students apply core knowledge, concepts, or skills to solve real-world problems. Relevant learning is interdisciplinary and contextual. Student work can range from routine to complex at any school grade and in any subject. Relevant learning is created, for example, through authentic problems or tasks, simulation, service learning, connecting concepts to current issues, and teaching others. (International Center for Leadership in Education)

<b>Knowledge Taxonomy (Rigor)</b>	<i>Creating</i>	6				<i>D.1, G.2, G.3, G.4</i>	<i>A.1</i>
	<i>Evaluating</i>	5		<b>C</b>		<i>C.1, D.2, F.2</i>	
	<i>Analyzing</i>	4	<i>Assimilation</i>	<i>D.3, E.1, F.1</i>		<i>B.1, F.3 G.1</i>	<i>Adaptation</i>
	<i>Applying</i>	3		<i>C.2</i>		<i>D.4</i>	
	<i>Understanding</i>	2		<b>A</b>		<b>B</b>	
	<i>Remembering</i>	1		<i>Acquisition</i>		<i>Application</i>	
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
			<i>Knowledge in one Discipline</i>	<i>Apply in Discipline</i>	<i>Apply across Disciplines</i>	<i>Apply to real-world predictable situations</i>	<i>Apply to real-world unpredictable situations</i>
<b>Application Model (Relevance)</b>							

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Career Awareness	CUL801B
<b>SCO</b> A.1 Analyse skills and knowledge required for successful employment in food-related occupations and careers.	<b>SCO</b> <b>A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.</b>	<b>SCO</b> A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Analyse labor market information to determine employability outlook in food-related occupations ((local, regional, national, global).
- Analyse food-related occupations in relationship to the knowledge and skills expected for employment.
- Critique educational opportunities in each of the career pathways (university, college, apprenticeship, work).
- Investigate industry certifications for food-related occupations and careers.
- Examine personal skills and interests to skills required for employment in food-related occupations.
- Compare personal qualifications and skills related to education and training programs in each of the career pathways (e.g., university, college, apprenticeship, work).
- Develop an e-portfolio to record personal growth and personal goals.

## Elaboration

In FDS421A students began to explore career opportunities in foods related occupations and careers (e.g., dietician, cook, chef, nutritionist, food writer, food scientist, farm worker, food producers, server).

The intent of this outcome is to deepen students understanding of foods related occupations and careers by having them analyse labor market information in food-related occupations to determine employability opportunities (local, regional, national, global). This will require students to research, collect data, and analyse the data to support their findings.

Students will research and analyse job profiles (job profiles should include information related to job duties, working conditions, expected salary, and education requirements). A variety of food-related occupations can be found from such documents and sources as:

- Conference Board of Canada - Employability Skills
- Human Resources Service Development of Canada (HRSDC) - Essential Skills
- Occupational Analyses Series (HRSDC)
- National Occupational Classification (HRSDC)

Students should research and investigate educational opportunities in each of the career pathways (university, college, apprenticeship, work). This will allow students to determine local, regional, national, and global learning opportunities. This will require students to research, collect data, and develop a list of possible learning opportunities.

Students should also research industry certifications for food-related occupations and careers. This will allow students to gain a clearer understanding of the knowledge and skills expected for employment in food-related occupation and careers.

It is expected that the learning identified in outcome A.1 under the topic Career Awareness be integrated throughout the course to ensure students continually make connections between the following: needs of industry; educational opportunities; personal skills and interests.

**Please Note:** The specific curriculum outcome *create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations*, and achievement indicators for this outcome are the same in both CUL801A and CUL801B. Students enrolled in the CUL801A course start to develop their knowledge and skills related to this outcome. Students enrolled in CUL801B continue to develop their knowledge and skills related to this outcome. Students should continue to deepen their understanding of the food service industry and how their personal goals relate to it. Students enter into grade 10 with a Life Work Portfolio, it is strongly advised that students continue to enhance/develop this portfolio in CUL801A and continue building their portfolio in CUL801B to showcase their learning.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Meal Service	CUL801B
<b>SCO</b> B.1 Evaluate the preparation and execution of a small scale/family meal service.	<b>SCO</b> <b>B.1 Analyse the preparation and execution of a meal service (Second Course).</b>	<b>SCO</b> B.1 Evaluate the preparation and execution of a meal service (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Compare common types of dining environments (e.g., theme restaurants, fine-dining, family-style, hotels, military, commercial)
- Compare types of meal service (e.g., catering events, weekly meals service, buffet service).
- Plan and implement a meal service.
- Interpret existing customer service policies.
- Implement customer service policies.
- Analyse customer service policies best suited for specific food service operations and/or events.
- Analyse the preparation and execution of a meal service.
- Plan the food service team best suited for specific food service operations and/or events.
- Practice quality customer service in each role of the food service team.
- Analyse personal skills related to providing quality customer service as a member of the food service team.
- Analyse the customer service provided by the food service team.

## Elaboration

In FDS421A students were introduced to the application of a variety of small scale dining environments and meal services.

In Culinary Skills 801A and 801B students are expected to deepen their understanding of dining environments and meal services by comparing, designing, and implementing the preparation and execution of a meal service. Students will also be expected to extend their learning by analysing customer service polices best suited for food service operations and/or events. This is a **performance outcome** and will require that students setup and serve actual customers. This could take place in a variety of ways (e.g., catering events, weekly meals service, buffet service).

For students to understand and implement customer service they need to be able to research, discuss, and implement customer service policies.

For students to analyse their effectiveness in preparing and performing a meal service they will be required to reflect on and discuss the following: the meal service, customer feedback, the effectiveness of all members of the team, and their own contribution to the team. This analysis would then be applied to future meal service opportunities.

**Please Note:** The specific curriculum outcome *analyse the preparation and execution of a meal service* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, the rigor of this outcome is changed to *evaluate the preparation and execution of a meal service* for the third course. The revised achievement indicators are summarized in the table below.

<i>analyse the preparation and execution of a meal service</i>	<i>evaluate the preparation and execution of a meal service (p. 125)</i>
<ul style="list-style-type: none"> <li>• compare common types of dining environments</li> <li>• compare types of meal service</li> <li>• plan and implement a meal service</li> <li>• interpret existing customer service policies</li> <li>• implement customer service policies</li> <li>• analyse customer service polices best suited for specific food service operations and/or events.</li> <li>• analyse the preparation and execution of a meal service</li> <li>• plan the food service team best suited for specific food service operations and/or events.</li> <li>• practice quality customer service in each role of the food service team</li> <li>• analyse personal skills related to providing quality customer service as a member of the food service team</li> <li>• analyse the food service team’s customer service</li> </ul>	<ul style="list-style-type: none"> <li>• compare common types of dining environments</li> <li>• compare types of meal service</li> <li>• lead and implement a meal service</li> <li>• evaluate customer service polices best suited for specific food service operations and/or events.</li> <li>• critique the preparation and execution of a meal service</li> <li>• lead a food service team</li> <li>• critique personal skills related to providing quality customer service</li> <li>• critique the food service team’s customer service</li> </ul>

**The following scenarios represent possible class configurations which enroll third year Culinary Skills students.**

Scenario 1 - Teachers will have a full class of students enrolled in their third Culinary Course (either CUL801A or CUL801B). In this case the specific curriculum outcome is *evaluate the preparation and execution of a meal service*.

Scenario 2 - Teachers will have students in their class that have completed FDS421A, and either CUL801A or CUL801B, along with students who only have completed FDS421A and are taking their first Culinary Skills course. In this case, teachers are expected to differentiate their instruction to ensure students in their second course are analysing the preparation and execution of a meals service, whereas, students in their third course are *evaluate the preparation and execution of a meals service*.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Kitchen and Food Safety	CUL801B
<b>SCO</b> C.1 Apply safe food handling, storage and preparation methods.	<b>SCO</b> <b>C.1 Evaluate safe food handling, storage and preparation methods.</b>	<b>SCO</b> C.1 Evaluate safe food handling, storage and preparation methods.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the roles and responsibilities of the food handler related to food handling, storage and preparation.
- Identify the roles and responsibilities of the Canadian Food Inspection Association (CFIA) related to food handling, storage and preparation.
- Identify provincially and nationally approved safe food handling courses.
- Demonstrate an understanding of the Food Safety Enhancement Program (FSEP).
- Inspect food to ensure it is safe to use.
- Critique their individual use of safe food handling and storage methods.
- Critique their individual use of personal hygiene standards for safe food handling and preparation.



## Elaboration

In Foods and Nutrition 421A, students cover food spoilage, food-borne illness, and food contamination. Students should review this material to help them better understand the roles and responsibilities of food handlers (e.g., grooming habits, hand washing, personal health).

It is important for students to research the Canadian Food Inspection Agency (CFIA) to better understand its roles and responsibilities related to food handling, storage and preparation. Also, students need to be aware of the Food Safety Enhancement Program as administered by CFIA.

It is important for students to be aware of and research industry recognized food handlers courses that are offered at both the national and provincial levels. Some students may opt to enrol in some of these programs if they are available. \*

When inspecting the condition of food students need to be aware of the conditions necessary for food-borne illness and contamination to occur and understand the temperature danger zone (5C - 60C) where bacteria can multiply rapidly.

Students in Foods and Nutrition 421A were expected to use safe food handling and storage method as well as demonstrating high standards regarding personal hygiene when handling, storing and preparing food. In CUL801A, students need to take a proactive approach to food handling, storage and preparation by reflecting on, critically analysing, and improving their skills in these areas.

*\* Throughout the Culinary Skills Curriculum references are made to industry certifications and courses. These programs are not a mandatory component of the Culinary Skills curriculum but are referenced as enriched opportunities that student may opt to take. These programs will enrich students learning and better prepare them for a career in the food service industry. Students are responsible for the monetary and time commitments of these programs.*

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Kitchen and Food Safety	CUL801B
<b>SCO</b> C.2 Apply appropriate precautionary measures associated with food preparation.	<b>SCO</b> <b>C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Second Course).</b>	<b>SCO</b> C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Explain the rights and responsibilities of government, employers, and workers pertaining to occupational health and safety OH&S.
- Apply OH&S practices in the foods lab.
- Recognize emergency situations and understand correct response procedures.

## Elaboration

In FDS421A students were introduced to basic precautionary measures and emergency responses associated with food preparation. This outcome is intended to deepen and broaden students learning of precautionary measures and emergency responses pertaining to occupational health and safety (OH&S), fire prevention and first aid.

The purpose of workplace health and safety legislation is to protect, the worker, against hazards on the job. It outlines the general rights and responsibilities of the employer, the supervisor and the worker. The basic elements are as follows:

- Government's Responsibilities
  - › to enforce occupational health and safety legislation
  - › to conduct workplace inspections
  - › to make information available
  - › to promote training, education and research
- Employer's Responsibilities
  - › to establish and maintain a Health and Safety Committee (HSC), or select at least one health and safety (H&S) representative
  - › to take every reasonable precaution to ensure safe workplaces
  - › to train employees about any potential hazards
  - › to supply personal protective equipment and ensure workers know how to use the equipment safely and properly
  - › to immediately report all critical injuries to the government department responsible for occupational health and safety or compensation
  - › to train all employees on how to safely use, handle, store and dispose of hazardous substances and handle emergencies
- Worker's Responsibilities
  - › to work in compliance with the OH&S Act and regulations
  - › to use personal protective equipment and clothing as directed by the employer
  - › to report workplace hazards and dangers
- Worker's Rights
  - › The Right to Know
  - › The Right to Participate
  - › The Right to Refuse Dangerous Work

It is necessary for students to apply their knowledge of OH&S throughout the course. It is important for students to recognize the risk factors in the culinary classroom that can cause injuries and the ways to reduce these risk factors.

- Working with food presents its own unique set of potential hazards. Some of the main ones are:
  - › Handling raw meat and poultry.
  - › Exposure to cleaning products, pest control products, or other chemicals
  - › Working in awkward positions or performing repetitive manual tasks.
  - › Lifting or carrying heavy trays.
  - › Risk of accidental radiation leaks from microwave ovens.
  - › Working in extreme temperatures.
  - › Working with knives, mincers, and other dangerous tools or equipment.
  - › Risk of burns or fire from ovens, deep-fat fryers, and steam from pots.
  - › Slips, trips and falls, stress, working alone.
- Some preventive measures to consider are:
  - › Wash hands frequently.
  - › Learn safe lifting techniques.
  - › Know how to work with all equipment and tools required for the job.
  - › Wear appropriate personal protective equipment
  - › Know how to report hazards.
  - › Describe the five classes of fires and how to control them
  - › Describe the treatment for common wounds and/or injuries that may occur in a kitchen environment.
- Some good general safe work practices are:
  - › Practice safe lifting techniques.
  - › Exercise caution when working with knives and other sharp equipment.
  - › Use, maintain and store personal protective equipment according to manufacturers' recommendations.
  - › Follow classroom safety rules and housekeeping procedures.
  - › Read the material safety data sheet (MSDS) for any hazardous product that you use and follow recommended safety precautions.
  - › Locate all fire protection equipment within the facility
  - › Locate information regarding certification course available in the community related to first aid\*

*\* Throughout the Culinary Skills Curriculum references are made to industry certifications and courses. These programs are not a mandatory component of the Culinary Skills curriculum but are referenced as enriched opportunities that student may opt to take. These programs will enrich students learning and better prepare them for a career in the food service industry. Students are responsible for the monetary and time commitments of these programs.*

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Kitchen Basics	CUL801B
<b>SCO</b> D.1 Demonstrate kitchen organization and collaboration in partner and group work, including integration of planning skills	<b>SCO</b> <b>D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Second Course).</b>	<b>SCO</b> D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify and describe the duties of each member of a kitchen team.
- Apply first in first out inventory control.
- Implement basic kitchen organization strategies to meet a particular task.
- Plan, organize and share tasks among group members.

## Elaboration

*“The purpose of kitchen organization is to assign or allocate tasks so they can be done efficiently and properly and so all workers know what their responsibilities are.” ~ Professional Cooking for Canadian Chefs (Gisslen 2011)*

In FDS 421A students began to develop the knowledge and skills necessary to be an effective member of a food service team by examining topics such as work ethics, kitchen flow, inventory control, teamwork, and work ethics. The purpose of this outcome is to continue to broaden and deepen their knowledge and skills in these areas.

Below is a list of members of a classical kitchen brigade.

- Executive chef – manager of the entire food service operation
- Sous chef – directly in charge of food production
- Station chefs – in charge of particular areas of production, such as pastry chef, saucier, poissonier and garde manager
- Assistant chefs – help the station chefs
- Kitchen help – wash, peel and trim vegetables and wash dishes

For students to plan, organize, and share tasks among group members they will need to develop their knowledge and skills in the following:

- basic kitchen organization (e.g., the menu, types of establishments, size of the operation or event, the physical space, facilities, and equipment)
- the application of First in First Out (FIFO) inventory control both within their small working kitchens, and the larger classroom.

**Please Note:** The specific curriculum outcome *develop plans and implement effective strategies for task sequencing and time management in co-operation with partners and groups* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, the rigor of the achievement indicators is increased, this is summarized in the table below.

<i>CUL801A - D1</i>	<i>CUL801B - D1 (see p. 125 for elaboration)</i>
<ul style="list-style-type: none"><li>• Identify and describe the duties of each member of a kitchen team</li><li>• plan, organization and tasks among group members, assisting others in group when necessary with minimal support.</li></ul>	<ul style="list-style-type: none"><li>• Explain how food service operations need to organize their work force.</li><li>• plan, organize, and share tasks among group members, assisting others in group when necessary</li></ul>

# C CUL801A

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A - Kitchen Basics</b>	<b>CUL801B</b>
<b>SCO</b> D.2 Demonstrate the ability to accurately analyse and execute a recipe using appropriate equipment and measuring techniques.	<b>SCO</b> <b>D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Second Course).</b>	<b>SCO</b> D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Recognize the accuracy of a recipe and correct where necessary (e.g., missing ingredients, incorrect quantities).
- Determine equivalents, substitutions, and conversions of recipes (e.g., adjusting ingredients, adjusting yield).
- Apply an understanding of cooking terminology and techniques described in recipes.

## Elaboration

*“Recipes are important tools in the culinary profession. To get the desired results, you must carefully follow specific directions contained in a recipe. The purpose of a recipe is to provide a set of written instructions for preparing a certain food. A recipe is not a just a general set of instructions. Instead, a recipe is a precise set of directions for using ingredients, procedures, and cooking instructions for a certain dish. Following instructions and measuring ingredients accurately results in a consistent quality production of the same quantity every time it is prepared.” ~ Culinary Essentials (2004)*

In FDS421A students began developing their skills reading, interpreting, adjusting recipes and measuring accurately.

The purpose of this outcome is for students to continue to develop their skills and proficiency in this area by:

- recognizing the accuracy of a recipe and correct where necessary (e.g., missing ingredients, incorrect quantities, adapting cooking times where necessary)
- determining equivalents, substitutions, and conversions (e.g., adjusting ingredients, adjusting yield for a particular meal service, substituting ingredients for nutritional or special dietary needs)
- continuing to broaden and apply their understanding of cooking terminology and techniques described in recipes (e.g., hot water bath, gel, grill, al dente, soft peaks)

# C CUL801A Career & Technical Education

---

## Culinary Skills

<b>FDS421A</b>	<b>CUL801A - Kitchen Basics</b>	<b>CUL801B</b>
<b>SCO</b> D.3 Demonstrate competence when using a variety of kitchen tools and equipment for preparing foods.	<b>SCO</b> <b>D.3 Compare various types of equipment used for food preparation (Second Course).</b>	<b>SCO</b> D.3 Evaluate new technologies available for food preparation (Third Course).

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Compare various utensils and equipment that can be used for a specific task.
- Select the appropriate tool for a task.
- Recognize and report defects in tools and equipment.



## Elaboration

This outcome is a **performance outcome** and require the students to work with a variety of kitchen tools and equipment when preparing food. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related identification, use and maintenance of kitchen tools and equipment.

In FDS421A students developed knowledge and skills related to the following concepts for each tool or piece of equipment they were required to use when preparing foods.

- Tool identification and description
- General tool and equipment safety
- Specific safety requirement for particular tools and/or equipment
- Proper maintenance, including storage and handling of each tool or piece of equipment used.

The purpose of this outcome is for students to further their knowledge and skills in these areas as well as the following:

- comparing tools and equipment that can be used for the same task (e.g., food processor or immersion blender, rasp or grater, whisk or electric mixer)
- selecting the appropriate and most efficient tool for a given task
- recognize defects in tools and equipment and report and/or recommend corrective measures

# C CUL801A Career & Technical Education

---

## Culinary Skills

<b>FDS421A</b>	<b>CUL801A - Kitchen Basics</b>	<b>CUL801B</b>
<b>SCO</b> D.4 Demonstrate effective knife skills.	<b>SCO</b> <b>D.4 Demonstrate effective knife skills.</b>	<b>SCO</b> D.4 Demonstrate effective knife skills.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate general knife safety practices.
- Select the proper knives for a particular task.
- Apply appropriate techniques for holding the knife.
- Apply appropriate techniques for the guiding hand.
- Demonstrate proper cutting techniques for a variety of tasks (e.g., trimming, peeling, dicing, chopping, mincing, shredding, slicing).
- Demonstrate the ability to properly sharpen, clean and store knives.

## Elaboration

*“The chef’s knife, though not the only tool a chef must master, is generally the knife a novice first learns to use, as well as the one a professional picks up most often. This knife is the most versatile tool in any kitchen because of the many ways in which a skilled hand can work it. In order to develop an accomplished hand, it is important to study, analyse, and practice many cutting techniques used in handling your chef’s knife. ... As you work with your knives, you will develop a rhythm, learn to coordinate hand motions with cutting tasks, and develop a sense of confidence.” In the Hands of a Chef (2008)*

This outcome is a performance outcome will require the students to work with a variety of kitchen knives to prepare food. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their knife skills.

In FDS421A students began to develop their knowledge and skills related to kitchen knives. The purpose of this outcome is to extend this learning and enhance the students knife skills.

Students knowledge of knives should focus on the following:

- selecting the appropriate knife for a given task
- the effects of variety of cutting techniques have on the final product (e.g., cooking methods, cooking times, flavour, texture, presentation)

Students should begin to develop basic skills in using knives by focusing on the following:

- applying appropriate cutting techniques (e.g., trimming, peeling, dicing, chopping, mincing, slicing, shredding, julienne, specialty cuts)
- properly cleaning and storing knives

**Please Note:** The specific curriculum outcome *demonstrate the use of effective knife skills* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, students should continue to show improvement in their knife skills in both accuracy and efficiency

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Nutrition and Food Science	CUL801B
<b>SCO</b> E.3 Create nutritious menus for a variety of dietary and budget considerations using Eating Well with Canada's Food Guide.	<b>SCO</b> <b>E.1 Analyse healthy balanced food service menus for a variety of dietary and budget considerations.</b>	<b>SCO</b> E.1 Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Investigate various types of menus and how they meet the nutritional needs found in Canada's Food Guide.
- Identify the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility.
- Plan daily and weekly menus that promote healthy meals using Eating Well with Canada's Food Guide.
- Apply knowledge of special dietary needs to menu planning and food preparation (e.g., select recipes for special dietary needs, prevention of cross-contamination, adapt recipes).
- Examine ways to improve the nutritional values of recipes.
- Examine types of food additive and enrichments and their function in food products (e.g., vitamins, salt, sweeteners).
- Examine budget factors that influence healthy menu options (e.g., income, transportation, season).

## Elaboration

In FDS421A students acquired a basic understanding of Canada’s Food Guide (e.g., purpose, history, use, food groups, key nutrients)

The purpose of this outcome is for students to plan healthy well balanced menus using Canada’s Food Guide.

To plan a nutritious meal students should be able to; identify the four food groups in Canada’s Food Guide; determine the required daily servings within each food group; select foods from each group to fulfil the daily requirements; plan a daily menu.

To plan a weekly menu students should be able to; create weekly menu planning chart; source recipes to meet the weekly nutritional needs; determine the required ingredients and quantities; complete a cost analysis of the required food products; create a time management plan

**Please Note:** The specific curriculum outcome *analyse healthy balanced food service menus for a variety of dietary and budget considerations* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, the rigor of this outcome is changed to *evaluate healthy balanced food service menus for a variety of dietary and budget considerations* for the third course. The revised achievement indicators are summarized in the table below.

<i>Analyse healthy balanced food service menus for a variety of dietary and budget considerations</i>	<i>Evaluate healthy balanced food service menus for a variety of dietary and budget considerations (p. 139)</i>
<ul style="list-style-type: none"> <li>• investigate various types of menus and how they meet the nutritional needs found in Canada’s Food Guide</li> <li>• identify the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility</li> <li>• plan daily and weekly menus that promote healthy meals using Eating Well with Canada’s Food Guide</li> <li>• apply knowledge of special dietary needs to menu planning and food preparation</li> <li>• examine ways to improve the nutritional values of recipes</li> <li>• examine types of food additive and enrichments and their function in food products.</li> <li>• examine budget factors that influence healthy menu options</li> </ul>	<ul style="list-style-type: none"> <li>• apply the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility</li> <li>• plan and critique daily and weekly menus that promote healthy meals using Eating Well with Canada’s Food Guide</li> <li>• modify recipes to meet special dietary needs to menu planning and food preparation</li> <li>• critique the use of food additive and enrichments</li> <li>• examine budget factors that influence healthy menu options</li> <li>• research ideas on healthy eating and menu planning that differ from Canada’s Food Guide.</li> </ul>

The following scenarios represent possible class configurations which enroll third year Culinary Skills students.

### Scenario 1

Teachers will have a full class of students enrolled in their third Culinary Course (either CUL801A or CUL801B). In this case the specific curriculum outcome is *evaluate healthy balanced food service menus according to “Canada’s Food Guide”*.

### Scenario 2

Teachers will have students in their class that have completed FDS421A, and either CUL801A or CUL801B, along with students who only have completed FDS421A and are taking their first Culinary Skills course. In this case, teachers are expected to differentiate their instruction to ensure students in their second course are analysing the preparation and execution of a meals service, whereas, students in their third course are *Evaluate healthy balanced food service menus according to “Canada’s Food Guide”*.

# C CUL801A

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A - Social, Environmental, &amp; Economic Influences</b>	<b>CUL801B</b>
<b>SCO</b> F.1 Analyse comparative costs and nutritional value of convenience, restaurant, and self-prepared foods.	<b>SCO</b> <b>F.1 Analyse the effect of food marketing practices on consumer behavior. (Second Course).</b>	<b>SCO</b> F.1 Create a marketing strategy for a food service or food product (Third Course).

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Examine the role of advertising and other marketing techniques in food purchase and consumption.
- Compare various advertisements and other marketing techniques in food purchase and consumption (e.g., target audiences, messages (direct or indirect), the location and placement of products in stores).
- Investigate the concept of ‘value added’ products.

## Elaboration

*“The process of instilling meaning into machine-goods is called commercialism. Advertising is at the heart of commercialism. It is the part that adds meaning and, in so doing, attempts to make one identical object more valuable than another. The great adman Rosser Reeves used to illustrate this. He would hold up two quarters and then, pointing to one of them say, “ My job is to make you think that this quarter is more valuable than that one.” ~ Twenty Ads that Shook the World (Twitchell 2000)*

The purpose of this outcome is for students to analyse the effects of advertising as it related to consumer food choices and for students to develop an understanding of how marketing can effect consumers food choices.

There is an ever growing range of marketing techniques used by companies to promote the sale of their products (e.g., packaging design, slogans, food claims, location in store, focus groups, target audience). Students should begin to develop their knowledge of a variety of these techniques, the marketing campaigns (e.g., print, television, radio, internet) and discuss the effects these strategies have on consumers.

Value-added is a production and marketing strategy driven by customer needs and perceptions. Any step in the production process that improves the product for the customer and results in a higher net worth is called ‘value added’. Value-added food products are raw or pre-processed commodities whose value has been increased through the addition of ingredients or processes that make them more attractive to the buyer and/or more readily usable by the consumer.

Students should explore the ever growing range of marketing techniques used by companies to promote the sale of their products.

For students successfully analyse the effect of food marketing practices on consumer behavior they should explore the following:

- target audiences for particular food products
- the messages, (direct or indirect) of particular food advertisements
- the location and placement of products in stores
- advertising methods

# C CUL801A

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A - Social, Environmental, &amp; Economic Influences</b>	<b>CUL801B</b>
<b>SCO</b> F.2 Identify factors that affect food production and food supply especially in Canada today.	<b>SCO</b> <b>F.2 Evaluate food choices based on social, environmental, and economic factors</b>	<b>SCO</b> F.2 Evaluate food choices based on social, environmental, and economic factors

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an awareness of environmental factors that affect food choices (e.g., transportation and fuel costs, pest control, soil erosion, global warming, weather and growing conditions).
- Assess the ecological footprint of a meal, event, and/or activity
- Discuss Education for Sustainable Development (ESD) related to food choices



## Elaboration

In FDS 421A students began to develop an understanding of factors contributing to food production, supply, and demand. The purpose of this outcome is for students to evaluate food choices based on environmental factors. Examples of environmental factors include (but are not limited to):

- transportation and fuel costs
- pest control
- biotechnology
- soil erosion
- global warming
- weather and growing conditions
- local economy

*The role of education for sustainable development (ESD) is to help people develop the attitudes, skills, and knowledge to make informed decisions for the benefit of themselves and others, now and for the future, and to act upon those decisions.*

*ESD is an approach to teaching and learning based on the ideals and principles that underlie sustainability – human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and protection of indigenous cultures. In these and many other dimensions, education for sustainable development is analogous with the vision and goals of UNESCO. — <http://www.unesco.ca> (downloaded December 2011)*

Health and environmental protection are two of the themes of Education for Sustainable Development. Students should begin to explore these issues and apply them to the context of food production and supply and demand.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Social, Environmental, and Economic Influences.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	<b>CUL801A - Social, Environmental, &amp; Economic Influences</b>	<b>CUL801B</b>
<b>SCO</b> F.3 Describe the cultural origins of recipes, ingredients, and meal etiquette of a variety of ethnic, regional, and local cuisines, as represented in Canada.	<b>SCO</b> <b>F.3 Prepare a meal using foods and preparation methods from a particular culture</b>	<b>SCO</b> F.3 Prepare a meal using foods and preparation methods from a particular culture

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Research and discuss the foods of various cultures in Canada and around the world and their preparation.
- Research and discuss eating practice and table etiquette from a variety of cultures.
- Compare the foods, preparation methods, eating practices, and table etiquette of cultures in Canada and around the world.

## Elaboration

The purpose of this outcome is for students to develop an awareness of the wide range of ethnic and cultural customers related to food that are present in Canada and their local communities.

Students should research and discuss the foods of various cultures in Canada and around the world and their preparation such as:

- staple foods
- cooking methods
- utensils
- preserving
- storage methods

Students should research and discuss eating practice and table etiquette from a variety of cultures such as

- time of main meal
- religious practices
- eating utensils
- where food is eaten and with whom
- accepted behaviors

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Social, Environmental, and Economic Influences. Students are expected to prepare a meal using foods and preparation methods from a particular culture, this should be completed within the context of the learning described in the Food Preparation outcomes G.1 - G.4.

# C CUL801A Career & Technical Education

---

## Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.1 Prepare baked goods by applying baking principles.	<b>SCO</b> <b>G.1 Prepare complex batter and dough recipes by applying baking principles (Second Course).</b>	<b>SCO</b> G.1 Prepare baked goods.

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Examine various types of flour (e.g., wheat, whole wheat, cracked wheat, corn, rye, barley, oat, buckwheat, potato, soy, tapioca).
- Examine the characteristics of a variety of flours (e.g., color, texture, taste, smell, nutritional value, gluten development).
- Prepare baking ingredients according to selected recipes.
- Describe the difference between batters and doughs.
- Explain the action of yeast and other leavening agents in batters and dough mixtures.
- Develop a time/work management plan for the effective and timely combining of the ingredients.
- Select mixing tools and equipment.
- Perform accurate measurements of the ingredients.
- Demonstrate the ability to combine ingredients to produce batter and dough mixtures.
- Demonstrate the ability to determine 'doneness' in baked products.

## Elaboration

*“Bakers generally talk about formulas rather than recipes. ... The bakeshop in much like a chemistry laboratory both in scientific accuracy of all the procedures and in the complex reactions that take place during the mixing and baking.” ~ Professional Cooking for Canadian Chefs (Gisslen 2011)*

In FDS421A students were introduced to the basic processes and ingredients common to nearly all baked goods. The purpose of this outcome is for students to further develop their knowledge and skills in baking by broadening their understanding of the function of, and varieties of ingredients, and by preparing more complex batter and dough recipes.

It is expected that students learn about flour and the important role it plays in the baking process, below are some key points to consider.

- the types of flour (wheat, whole wheat, cracked wheat, corn, rye, barley, oat, buckwheat, potato, soy, tapioca).
- the characteristics of various flours (e.g., color, texture, taste, smell)
- the nutritional values of the various flours.
- the development of gluten.
- the difference between soft wheat flour and hard wheat flour
- the importance of mixing flours to enhance gluten development.
- the function of all baking ingredients and their effect on gluten development (e.g., liquids, fat, sugars, eggs, leavening agents, salt)
- the importance of measuring ingredients accurately
- calculating ratio and proportion to adjust recipe amounts
- selecting appropriate tools and equipment.

For students to prepare complex batter and dough recipes the following point should be considered.

- the difference between batters and doughs
- the action of yeast and other leavening agents in batters and dough mixtures
- a time/work management plan for the effective and timely combining of the ingredients
- selecting mixing tools and equipment, and assembling the baking ingredients
- setting baking temperatures and times
- accurate measurements of the ingredients
- the ability to combine ingredients to produce batter and dough mixtures
- the ability to determine ‘doneness’ in baked products.

**This outcome is a performance outcome** and require the students to prepare baked goods and work with the tools, equipment, and ingredients needed for baking. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the measurement techniques and ingredient preparation methods used to prepare baked goods.

The preparation of baked good is not limited to the ability to simply follow a recipe. Thou the ability to accurately follow and execute a recipe to produce a product is still an expectation. The act of preparing bake goods implies the students will analyse the methods, ingredients, and techniques described within recipes.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.	<b>SCO</b> <b>G.2 Create nutritious and flavorful dishes using egg and dairy products by applying cooking principles.</b>	<b>SCO</b> G.5. Create nutritious and flavorful dishes using fish, poultry and meat products by applying cooking principles.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of eggs and dairy products as ingredients used in cooking.
- Apply cooking principles to prepare and present egg dishes (e.g., cooking methods, building flavour).
- Apply cooking principles to prepare dairy products used in recipes (e.g., cooking methods, building flavour).
- Select eggs and dairy products for use in recipes.
- Adapt egg and dairy recipes to meet dietary needs.
- Create nutritious and flavourful dishes featuring eggs and dairy products.

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to egg and dairy products.

### **Task 28 - Prepares cheese and dairy-related dishes.**

*Preparing cheese and dairy-related dishes involves selecting and understanding the various properties of each product. It is important to understand the methods of incorporating cheese and dairy-related products in recipes. Attention to quality and safety is important to preparing these dishes. For the purpose of this analysis, dairy also includes other non-dairy replacements.*

H-28.01 Selects cheese and dairy-related ingredients.

H-28.02 Processes cheese and dairy-related ingredients.

H-28.03 Finishes cheese and dairy-related products.

### **Task 29 - Prepares eggs and egg-related dishes.**

*Cooks must have an understanding of the importance and delicacy of eggs and egg by-products. Eggs have many uses including acting as leavening agents, binding agents, and can be used on their own to create a number of dishes.*

H-29.01 Selects ingredients for eggs and egg-related dishes.

H-29.02 Processes ingredients for eggs and egg-related dishes.

H-29.03 Cooks eggs and egg-related dishes.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Eggs and Dairy.

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipe, handling and storage of finished products.

**This outcome is a performance outcome** and require the students to produce meals and work with the tools, equipment, and ingredients needed for cooking. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the preparation of common foods.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability of ingredients, and/or special dietary need.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.	<b>SCO</b> <b>G.3 Create nutritious and flavorful dishes using a variety of pasta and grain products by applying cooking principles.</b>	<b>SCO</b> G.6. Create nutritious and flavorful dishes featuring fruits and vegetables by applying cooking principles.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of pasta and grain products as ingredients used in cooking.
- Apply cooking principles to prepare and present pasta dishes (e.g., cooking methods, building flavour).
- Apply cooking principles to prepare and present rice dishes (e.g., cooking methods, building flavour).
- Apply cooking principles to prepare and present grain and grain products (e.g., cooking methods, building flavour).
- Apply cooking principles to prepare and present pulses (e.g., cooking methods, building flavour).
- Select pasta and grain products for use in recipes.
- Adapt pasta and grain recipes to meet dietary needs.
- Create nutritious and flavourful dishes featuring pastas and grain products.



## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Pasta and Grains.

**Trends** - A greater variety of these products is available. Consumer health awareness has driven these demands. Healthier pasta, pulse and grain choices are becoming more common. For example, whole wheat and rice pasta are becoming more popular, and alternative grains are being used as a substitute for rice. Awareness of allergies and dietary requirements has become more predominant in recent years.

### **Task 15 - Prepares pastas.**

*In order to produce a variety of quality pasta dishes in both individual and larger quantities, it is important for cooks to be aware of preparation techniques, methods and pasta ingredients.*

D-15.01 Selects pasta ingredients.

D-15.02 Makes pastas.

D-15.03 Cooks pastas.

D-15.04 Assembles pasta dishes.

### **Task 16 - Prepares pulses, grains and nuts.**

*Pulses, grains and nuts can be served on their own or can be incorporated as key ingredients in many dishes such as soups, dressings and salads. They must be properly cleaned, cooked and stored.*

D-16.01 Selects pulses, grains and nuts.

D-16.02 Cooks pulses, grains and nuts.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Pastas and Grains.

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

**This outcome is a performance outcome** and require the students to produce meals and work with the tools, equipment, and ingredients needed for cooking. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the preparation of common foods.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability if ingredients, and/or special dietary need.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.

# C CUL801A

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.	<b>SCO</b> <b>G.4 Create nutritious and flavorful salads and sandwiches by applying cooking principles.</b>	<b>SCO</b> G.7. Create nutritious and flavorful soups, stocks, and sauces by applying cooking principles.

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of the variety and characteristics of salads and sandwiches.
- Apply cooking principles to the planning, preparation, and presentation of salads (e.g., cooking methods, building flavour).
- Apply cooking principles to the planning and preparation of salad dressings (e.g., cooking methods, building flavour).
- Apply cooking principles to the planning, preparation, and presentation of sandwiches (e.g., cooking methods, building flavour).
- Apply cooking principles to the planning, preparation, and presentation of cold food platters (e.g., cooking methods, building flavour).
- Select salad and sandwich recipes.
- Adapt salad and sandwich recipes to meet dietary needs.
- Create nutritious and flavourful salads and sandwiches.

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Salads and Sandwiches

### Task 22 - Prepares salads.

*Salads are a combination of various ingredients including vegetables, fruit, grains, pulses, meat, seafood and cheese. They can be served hot or cold.*

*Dressings add flavour, texture, appearance and moisture to salads. It is important to prepare most salads as close to serving time as possible.*

G-22.01 Selects salad ingredients.

G-22.02 Processes salad ingredients.

G-22.03 Processes dressings.

G-22.04 Assembles salads.

### Task 24 - Prepares sandwiches.

G-24.01 Selects sandwich ingredients.

G-24.02 Processes sandwich ingredients.

G-24.03 Assembles sandwiches.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Pastas and Grains.

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

**This outcome is a performance outcome** and require the students to produce meals and work with the tools, equipment, and ingredients needed for cooking. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related to the preparation of common foods.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability if ingredients, and/or special dietary need.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.





Education and Early  
Childhood Development  
English Programs

# Prince Edward Island Technology Education Curriculum

## Career and Technical Education

Culinary Skills  
**CUL801B**

**CURRICULUM**

**This page has intentionally been left blank.**

**CUL801B**  
**Rigor and Relevance Analysis**

## Culinary Skills 801B Rigor and Relevance Analysis

The information is designed to provide clarity as to the nature of the intended outcomes for the given courses, and for the teacher to find a balance between content and application.

### Defining Rigor (Knowledge Taxonomy)

Rigor refers to academic rigor—learning in which students demonstrate a thorough, in-depth mastery of challenging tasks to develop cognitive skills thought, analysis, problem-solving, evaluation, or creation. Rigorous learning can occur at any school grade and in any subject. (International Center for Leadership in Education)

Rigor Curriculum Map – Culinary Skills CUL801B					
	Knowledge Dimension	Factual	Conceptual	Procedural	Meta-cognitive
Cognitive Processes					
Remembering					
Understanding					
Applying			<i>C.2</i>	<i>D.4</i>	
Analyzing				<i>F.3, G.1</i>	
Evaluating			<i>D.3, E.1, F.2</i>	<i>B.1, C.1, D.2</i>	
Creating			<i>F.1</i>	<i>D.1, G.5, G.6, G.7</i>	<i>A.1</i>



# Culinary Skills 801B Rigor and Relevance Analysis

## Defining Relevance (Application Taxonomy)

Relevance refers to learning in which students apply core knowledge, concepts, or skills to solve real-world problems. Relevant learning is interdisciplinary and contextual. Student work can range from routine to complex at any school grade and in any subject. Relevant learning is created, for example, through authentic problems or tasks, simulation, service learning, connecting concepts to current issues, and teaching others. (International Center for Leadership in Education)

<b>Knowledge Taxonomy (Rigor)</b>	<i>Creating</i>	6			<i>F.1, G.5, G.6, G.7</i>	<i>A.1, D.1</i>	
	<i>Evaluating</i>	5		<i>D.3</i>	<i>B.1, E.1, F.2</i>	<i>C.1, D.2</i>	
	<i>Analyzing</i>	4		<b>C</b>	<i>F.3, G.1</i>	<b>D</b>	
	<i>Applying</i>	3		<b>Assimilation</b>	<i>C.2</i>	<i>D.4</i>	
	<i>Understanding</i>	2		<b>A</b>		<b>B</b>	
	<i>Remembering</i>	1		<b>Acquisition</b>		<b>Application</b>	
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
			<i>Knowledge in one Discipline</i>	<i>Apply in Discipline</i>	<i>Apply across Disciplines</i>	<i>Apply to real-world predictable situations</i>	<i>Apply to real-world unpredictable situations</i>
<b>Application Model (Relevance)</b>							

# C CUL801B Career & Technical Education

## Culinary Skills

FDS421A	CUL801A	CUL801B - Career Awareness
<b>SCO</b> A.1 Analyse skills and knowledge required for successful employment in food-related occupations and careers.	<b>SCO</b> A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.	<b>SCO</b> <b>A.1 Create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations.</b>

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Analyse labor market information to determine employability outlook in food-related occupations ((local, regional, national, global).
- Analyse food-related occupations in relation to the knowledge and skills expected for employment.
- Critique educational opportunities in each of the career pathways (university, college, apprenticeship, work).
- Investigate industry certifications for food-related occupations and careers.
- Examine personal skills and interests to skills required for employment in food-related occupations.
- Compare personal qualifications and skills related to education and training programs in each of the career pathways (e.g., university, college, apprenticeship, work).
- Develop an e-portfolio to record personal growth and personal goals.

## Elaboration

In FDS421A students began to explore career opportunities in foods related occupations and careers (e.g., dietician, cook, chef, nutritionist, food writer, food scientist, farm worker, food producers, server).

The intent of this outcome is to deepen students understanding of foods related occupations and careers by having them analyse labor market information in food-related occupations to determine employability opportunities (local, regional, national, global). This will require students to research, collect data, and analyse the data to support their findings.

Students will then be required to research and analyse the job profiles (job profiles should include information related to job duties, working conditions, expected salary, and education requirements) for a variety of food-related occupations can be found from such documents and sources as

- Conference Board of Canada - Employability Skills
- Human Resources Service Development of Canada (HRSDC) - Essential Skills
- Occupational Analyses Series (HRSDC)
- National Occupational Classification (HRSDC)

Students should research and investigate educational opportunities in each of the career pathways (university, college, apprenticeship, work). This will allow students to determine local, regional, national, and global learning opportunities. This will require students to research, collect data, and develop a list of possible learning opportunities.

Students should also research industry certifications for food-related occupations and careers. This will allow students to gain a clearer understanding of the knowledge and skills expected for employment in food-related occupation and careers.

It is expected that the learning identified in outcome A.1 under the topic Career Awareness be integrated throughout the course to ensure students continually make connections between the following: needs of industry; educational opportunities; personal skills and interests.

**Please Note:** The specific curriculum outcome *create a learning plan to chart the growth and acquisition of personal skills required for employment in food-related occupations*, and achievement indicators for this outcome are the same in both CUL801A and CUL801B. Students enrolled in the CUL801A course start to develop their knowledge and skills related to this outcome. Students enrolled in CUL801B continue to develop their knowledge and skills related to this outcome. Students should continue to deepen their understanding of the food service industry and how their personal goals relate to it. Students enter into grade 10 with a Life Work Portfolio, it is strongly advised that students continue to enhance/develop this portfolio in CUL801A and continue building their portfolio in CUL801B to showcase their learning.

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Meal Service</b>
<b>SCO</b> B.1 Evaluate the preparation and execution of a small scale/family meal service.	<b>SCO</b> B.1 Analyse the preparation and execution of a meal service (Second Course).	<b>SCO</b> <b>B.1 Evaluate the preparation and execution of a meal service (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Lead and implement a meal service.
- Evaluate customer service polices best suited for specific food service operations and/or events.
- Critique the preparation and execution of a meal service.
- Lead a food service team.
- Critique personal skills related to providing quality customer service.
- Critique the food service team's customer service.

## Elaboration

**Please Note:** The specific curriculum outcome *analyse the preparation and execution of a meal service* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, the rigor of this outcome is changed from *analyse the preparation and execution of a meal service* to *evaluate the preparation and execution of a meals service* for the third course. The revised achievement indicators are summarized in the table below.

<i>analyse the preparation and execution of a meal service (p. 87)</i>	<i>evaluate the preparation and execution of a meal service</i>
<ul style="list-style-type: none"> <li>• compare common types of dining environments</li> <li>• compare types of meal service</li> <li>• plan and implement a meal service</li> <li>• interpret existing customer service policies</li> <li>• implement customer service policies</li> <li>• analyse customer service polices best suited for specific food service operations and/or events.</li> <li>• analyse the preparation and execution of a meal service</li> <li>• plan the food service team best suited for specific food service operations and/or events.</li> <li>• practice quality customer service in each role of the food service team</li> <li>• analyse personal skills related to providing quality customer service as a member of the food service team</li> <li>• analyse the food service team’s customer service</li> </ul>	<ul style="list-style-type: none"> <li>• lead and implement a meal service</li> <li>• evaluate customer service polices best suited for specific food service operations and/or events.</li> <li>• critique the preparation and execution of a meal service</li> <li>• lead a food service team</li> <li>• critique personal skills related to providing quality customer service</li> <li>• critique the food service team’s customer service</li> </ul>

In FDS421A and CUL801A students were expected to deepen their understanding of dining environments and meal services by comparing, designing, and implementing the preparation and execution of a meal service.

The intent of this outcome is for students to take ownership of meal services and events. Students are expected to make critical judgements, lead, and evaluate their personal performance, and the performance of others, in meal service situations.

This is a **performance outcome** and will require the students to participate in an actual meal service.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A	CUL801B - Kitchen and Food Safety
<b>SCO</b> C.1 Apply safe food handling, storage and preparation methods.	<b>SCO</b> C.1 Evaluate safe food handling, storage and preparation methods.	<b>SCO</b> <b>C.1 Evaluate safe food handling, storage and preparation methods.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Clean and sanitize kitchen tools and equipment.
- Implement a Hazard Analysis Critical Control Point (HACCP) System.
- Critique their use of safe food handling, preparation and storage methods.
- Critique their use of personal hygiene standards for safe food handling and preparation.

## Elaboration

In Foods and Nutrition 421A, students cover food spoilage, food-borne illness, and food contamination. It would be important to review this material with students as it relates to the cleaning and sanitizing of kitchen tools and equipment.

Safe food handling, storage and food preparation requires students to become proficient at cleaning and sanitizing kitchen tools and equipment. For this to happen it is important for students to have an understanding of the following:

- the difference between cleaning and sanitizing
- the standard procedures for manual and machine dish washing
- precautions and considerations to follow when cleaning and sanitizing kitchen utensils, equipment, stationary equipment and work surfaces
- WHMIS labels on kitchen cleaning products.
- local, provincial, and federal regulations and regulating food production and food service organizations.

Furthermore, it is important for students to be able to safely and efficiently clean and sanitize dishes, kitchen utensils, equipment, stationary equipment, and work surfaces. Students need to develop daily, weekly and monthly cleaning schedules for the kitchen.

Safe food handling, storage and food preparation requires students to understand and implement a Hazard Analysis Critical Control (HACCP) System. For this to happen it is important for students to have an understanding of the following:

- define HACCP
- identify the seven components of a HACCP system (recognize hazards, critical control points, set boundaries for control, monitor the system, corrective measures, evaluate the system, record keeping)
- identify local, provincial, and federal regulations and regulating organizations related to HACCP
- state which sectors of the food industry work with HACCP guidelines.
- explain the flow of food (receiving, storing, food preparation, cooking, food holding and serving, cooling, reheating)

Students in Foods and Nutrition 421A were expected to use safe food handling and storage methods as well as demonstrating high standards regarding personal hygiene when handling, storing and preparing food. In CUL801A, students need to take a proactive approach to food handling, storage and preparation by reflecting on, critically analysing, and improving their skills in these areas.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A	CUL801B - Kitchen and Food Safety
<b>SCO</b> C.2 Apply appropriate precautionary measures associated with food preparation.	<b>SCO</b> C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Second Course).	<b>SCO</b> <b>C.2 Apply appropriate precautionary measures and emergency response associated with food preparation (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Identify the basic components of WHMIS.
- Explain the importance of WHMIS in the food industry.
- Identify and discuss hazardous materials in the kitchen.
- Explain the responsibilities of workers, employers, suppliers pertaining to WHMIS.
- Interpret WHMIS labels.
- Interpret MSDS sheets.
- Apply the WHMIS system in the Foods lab.



## Elaboration

In FDS421A students were introduced to basic precautionary measures and emergency responses associated with food preparation. This outcome is intended to deepen and broaden students learning of precautionary measures and emergency responses by providing education and training to students in WHMIS.

Education and training under WHMIS (Workplace Hazardous Materials Information System) can be thought of as two separate parts. Education refers to the instruction of workers in general information such as how WHMIS works and the hazards of controlled products. Training refers to the instruction in site-specific information such as work and emergency procedures. Both education and training are an important part of understanding the hazards that may be present at your workplace. (Refer to the following site for additional information [http://www.ccohs.ca/oshanswers/legisl/whmis\\_education.html](http://www.ccohs.ca/oshanswers/legisl/whmis_education.html)). As well as providing students with education and training in WHMIS, students should be able to understand and explain the responsibilities of workers, employers, and suppliers pertaining to WHMIS.

When introducing the Workplace Hazardous Materials Information System (students should have had some exposure to WHMIS through the intermediate curriculum and FDS421A) the following should be addressed:

- WHMIS has developed a classification system of six hazard classes. These classes are depicted by eight hazard symbols that identify the specific hazards of controlled products. After a controlled product has been classified, the following three WHMIS elements are used to communicate health and safety information:
  - › WHMIS labels
  - › Material Safety Data Sheets (MSDS)
  - › WHMIS education and training programs
- identify and discuss hazardous materials in the kitchen
- identify and discuss the responsibilities of the employee, employer, supplier
- explain how to interpret and read a supplier label
- display the MSDS information binder, and identify its location
- read, interpret, and source information on the 9 section MSDS sheets
- identify and discuss WHMIS requirements for food service jobs

**It is necessary for students to apply their knowledge of WHMIS throughout the course.**

It is important for students to be aware of and research industry recognized WHMIS training courses. Some students may opt to enrol in some of these programs if they are available. \*

*\* Throughout the Culinary Skills Curriculum references are made to industry certifications and courses. These programs are not a mandatory component of the Culinary Skills curriculum but are referenced as enriched opportunities that student may opt to take. These programs will enrich students learning and better prepare them for a career in the food service industry. Students are responsible for the monetary and time commitments of these programs.*

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Kitchen Basics</b>
<b>SCO</b> D.1 Demonstrate kitchen organization and collaboration in partner and group work, including integration of planning skills	<b>SCO</b> D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Second Course).	<b>SCO</b> <b>D.1 Collaborate to create implementation plans for task sequencing, time management, and kitchen management (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Explain how food service operations need to organize their work force.
- Apply first in first out (FIFO) inventory control.
- Implement basic kitchen organization strategies to meet a particular task.
- Plan, organize, and share tasks among group members.

## Elaboration

*“Cooks are becoming more involved in the planning of menus, food costing, portion control, waste controls, purchasing controls, and, in some cases, basic kitchen management.” ~ National Occupational Analysis Cook (2008)*

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks related to this outcome

### **Task 2 Organizes work**

*Cooks manage their work in an effective and efficient manner by communicating with others, organizing the workspace and scheduling production*

A-2.01 — Communicates with others

A-2.02 — Organizes kitchen workplace

A-2.03 — Schedules production

### **Task 4 Manages Products and Supplies**

*Cooks are involved in the ordering, receiving and storing of products. During receiving and storing, products must be handled in a safe manner according to food regulations.*

A-4.01 — Orders products and supplies

A-4.02 — Receives products

A-4.03 — Maintains inventory

A-4.04 — Stores products

In FDS 421A, and CUL801A students began to develop the knowledge and skills necessary to be an effective member of a food service team by examining topics such as: the duties of the food service team, kitchen organization, work ethics, kitchen flow, inventory control, teamwork, and work ethics. The purpose of this outcome is to continue to broaden and deepen their knowledge and skills in these areas.

Students will further develop their knowledge and skills related to inventory control standards and receiving kitchen goods by having the opportunity to engage in the following:

- creating a dating system for the inventory
- applying FIFO inventory control
- developing receiving and storage procedures.
- inspecting the condition of receivables for temperature, damage and/or spoilage
- applying storage procedures for kitchen inventory (e.g., dry goods, refrigerated foods, frozen foods)

<i>CUL801A - D1 (see p. 87 for elaboration)</i>	<i>CUL801B - D1</i>
<ul style="list-style-type: none"> <li>• Identify and describe the duties of each member of a kitchen team</li> <li>• apply first in first out inventory control</li> <li>• implement basic kitchen organization strategies to meet a particular task</li> <li>• plan, organization and tasks among group members</li> </ul>	<ul style="list-style-type: none"> <li>• Explain how food service operations need to organize their work force.</li> <li>• apply first in first out inventory control</li> <li>• implement basic kitchen organization strategies to meet a particular task</li> <li>• plan, organize, and share tasks among group members</li> </ul>

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Kitchen Basics</b>
<b>SCO</b> D.2 Demonstrate the ability to accurately analyse and execute a recipe using appropriate equipment and measuring techniques.	<b>SCO</b> D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Second Course).	<b>SCO</b> <b>D.2 Evaluate recipes that require the use of a variety of food preparation techniques (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Recognize the accuracy of a recipe and correct where necessary (e.g., missing ingredients, incorrect quantities).
- Determine equivalents, substitutions, and conversions of recipes (e.g., adjusting ingredients, adjusting yield).
- Apply an understanding of cooking terminology and techniques described in recipes.

## Elaboration

*“Recipes are important tools in the culinary profession. To get the desired results, you must carefully follow specific directions contained in a recipe. The purpose of a recipe is to provide a set of written instructions for preparing a certain food. A recipe is not a just a general set of instructions. Instead, a recipe is a precise set of directions for using ingredients, procedures, and cooking instructions for a certain dish. Following instructions and measuring ingredients accurately results in a consistent quality production of the same quantity every time it is prepared.” ~ Culinary Essentials (2004)*

In FDS421A and CUL801A students were working on developing their skills reading, interpreting, adjusting recipes and measuring accurately.

The purpose of this outcome is for students to continue to develop their skills and proficiency in this area by:

- selecting and adjusting recipes for particular meal service
- determining equivalents, substitutions, and conversions (e.g., adjusting ingredients, adjusting yield for a particular meal service, substituting ingredients for nutritional or special dietary needs)
- continuing to broaden and apply their understanding of cooking terminology and techniques described in recipes (e.g., dredge, temper, proof, score, marinate, reduce)

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Kitchen Basics</b>
<b>SCO</b> D.3 Demonstrate competence when using a variety of kitchen tools and equipment for preparing foods.	<b>SCO</b> D.3 Compare various types of equipment used for food preparation (Second Course).	<b>SCO</b> <b>D.3 Evaluate new technologies available for food preparation (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Research and report on new equipment and technologies (e.g., kitchen appliances, cutting tools, food preparation equipment).
- Select and use equipment appropriate to the task and suggest alternatives.

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks related to this outcome

### Task 1 Maintains tools and equipment.

*Cooks use mechanized and non-mechanized equipment in the production of foods. They maintain tools and equipment to ensure a safe and hygienic workplace.*

A-1.02 Maintains pots, pans and utensils.

A-1.03 Maintains equipment and appliances.

This outcome is a **performance outcome** and require the students to work with a variety of kitchen tools and equipment when preparing food. Students should be assessed on an on going basis and students should be given timely formative feedback to enable them to deepen their knowledge and develop their skills related identification, use and maintenance of kitchen tools and equipment.

In FDS421A and CUL801A students developed knowledge and skills related to the following concepts for each tool or piece of equipment they were required to use when preparing foods.

- Tool identification and description
- General tool and equipment safety
- Specific safety requirement for particular tools and/or equipment
- Proper maintenance, including storage and handling of each tool or piece of equipment used.
- comparing tools and equipment that can be used for the same task (e.g., food processor or immersion blender, rasp or grater, whisk or electric mixer)
- selecting the appropriate and most efficient tool for a given task
- recognize defects in tools and equipment and recommend corrective measures

The purpose of this outcome is for students to further their knowledge and skills in these areas and to develop knowledge of new technologies being used in the food service industry.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A	CUL801B - Kitchen Basics
SCO D.4 Demonstrate effective knife skills.	SCO D.4 Demonstrate effective knife skills.	SCO <b>D.4 Demonstrate effective knife skills.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate general knife safety practices.
- Select the proper knives for a particular task.
- Apply appropriate techniques for holding the knife.
- Apply appropriate techniques for the guiding hand.
- Demonstrate proper cutting techniques for a variety of tasks (e.g., trimming, peeling, dicing, chopping, mincing, shredding, slicing).
- Demonstrate the ability to sharpen, clean and store knives.



## Elaboration

**Please Note:** The specific curriculum outcome *demonstrate the use of effective knife skills* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, students should continue to show improvement in their knife skills in both accuracy and efficiency

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks related to this outcome

### **Task 1 Maintains tools and equipment.**

*Cooks use mechanized and non-mechanized equipment in the production of foods. They maintain tools and equipment to ensure a safe and hygienic workplace.*

A-1.01 Maintains knives.

For Students enrolled in their third Culinary course, this outcome is focused on building their skill and proficiency with their kitchen knives. Students should be given time to practice their skills using a variety of cutting techniques (e.g., trimming, peeling, dicing, shredding, julienne, specialty cuts) and have high expectations related to the safe use, maintenance and storage of kitchen knives.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A	CUL801B - Nutrition and Food Science
<b>SCO</b> E.3 Create nutritious menus for a variety of dietary and budget considerations using Eating Well with Canada's Food Guide.	<b>SCO</b> E.1 Analyse healthy balanced food service menus for a variety of dietary and budget considerations.	<b>SCO</b> <b>E.1 Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Apply the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility.
- Plan and critique daily and weekly menus that promote healthy meals using Eating Well with Canada's Food Guide.
- Modify recipes to meet special dietary needs to menu planning and food preparation (e.g., select recipes for special dietary needs, prevention of cross-contamination, adapt recipes).
- Critique the use of food additive and enrichments (e.g., vitamins, salt, sweeteners).
- Examine budget factors that influence healthy menu options (e.g., income, transportation, season).
- Research ideas on healthy eating and menu planning that differ from Canada's Food Guide.

## Elaboration

*“Cooks are becoming more involved in the planning of menus, food costing, portion control, waste control, purchasing controls and basic kitchen management. ... Cooks are increasingly dealing with customer requirements such as allergens, intolerances, and regional and ethnic preferences..” ~ National Occupational Analysis Cook (2011)*

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks related to this outcome

### **Task 3 - Manages information**

*Cooks must plan menus and use information documents such as recipes and schedules to ensure the smooth, safe operation of the workplace.*

A-3.01 — Plans menu and mise en place.

### **Task 5 - Performs routine trade activities**

*Cooks are expected to perform the following activities throughout all blocks of the trade.*

A-5.02 — Performs portion control.

### **Task 6 - Practices food safety procedures**

*Practicing food safety procedures is a critical component of the food service industry and ensures customer and employee health and safety.*

A-6.03 — Adapts kitchen practices to customers’ requirements

In FDS 421A, and CUL801A students planned healthy well balanced menus using Canada’s Food Guide. The purpose of this outcome is for students to further develop their knowledge and skills in this area with an increasing focus on quality and consistency.

<i>CUL801A - E1 (p. 101)</i>	<i>CUL801B - E1</i>
<ul style="list-style-type: none"> <li>• investigate various types of menus and how they meet the nutritional needs found in Canada’s Food Guide</li> <li>• identify the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility</li> <li>• plan daily and weekly menus that promote healthy meals using Eating Well with Canada’s Food Guide</li> <li>• apply knowledge of special dietary needs to menu planning and food preparation</li> <li>• examine ways to improve the nutritional values of recipes</li> <li>• examine types of food additive and enrichments and their function in food products.</li> <li>• examine budget factors that influence healthy menu options</li> </ul>	<ul style="list-style-type: none"> <li>• apply the principles of menu planning: variety, balance, truthfulness, nutrition and flexibility</li> <li>• plan and critique daily and weekly menus that promote healthy meals using Eating Well with Canada’s Food Guide</li> <li>• modify recipes to meet special dietary needs to menu planning and food preparation</li> <li>• critique the use of food additive and enrichments</li> <li>• examine budget factors that influence healthy menu options</li> <li>• research ideas on healthy eating and menu planning that differ from Canada’s Food Guide.</li> </ul>

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Social, Environmental, &amp; Economic Influences</b>
<b>SCO</b> F.1 Analyse comparative costs and nutritional value of convenience, restaurant, and self-prepared foods.	<b>SCO</b> F.1 Analyse the effect of food marketing practices on consumer behavior. (Second Course).	<b>SCO</b> <b>F.1 Create a marketing strategy for a food service or food product (Third Course).</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Select a food service or product to market to a community group or organization (e.g., weekly dinners, school lunches, catering services).
- Plan the components of the marketing strategy (e.g., target audiences, messages (direct or indirect), delivery method).
- Design the marketing strategy (e.g., social media, brochures, flyers, videos).

## Elaboration

The purpose of this outcome is for students to create a marketing strategy for a food service or a food product.

An integral component of the Culinary Skills program is the service of food. In CUL801A, students analyses the effects of marketing on consumers food choices. Students in 801B should now be combining these two components of the course by making connections between the production of a meal service and the product of a meal service.

Some examples of marketing strategies students could develop are:

- A brochure which advertises the food services of the Culinary Skills classes. (e.g., catering services, lunch services)
- A social media strategy highlighting the activities of the Culinary Skills program

A successfully food marketing strategy should include the following:

- target audiences for particular food products
- the messages, (direct or indirect) of particular food advertisements
- the location and placement of products in stores
- advertising methods

# C CUL801B

## Career & Technical Education

### Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Social, Environmental, &amp; Economic Influences</b>
<b>SCO</b> F.2 Identify factors that affect food production and food supply especially in Canada today.	<b>SCO</b> F.2 Evaluate food choices based on social, environmental, and economic factors	<b>SCO</b> <b>F.2 Evaluate food choices based on social, environmental, and economic factors</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an awareness of global issues that affect food choice (e.g., poverty, world hunger, food security, food banks, quotas, farming practices).
- Discuss the global food network with respect to the argument for buying local versus buying global.
- Discuss Education for Sustainable Development (ESD) related to food choices.
- Defend the food decisions made for a meal, activity, and/or event base on the social, environmental and economic factors.

## Elaboration

The purpose of this outcome is for students to continue to evaluate their food choices based on global issues.

This outcome is intended cover a wide sweeping range of topics. Students should be encouraged to choose an topic or area of interest to focus on for this outcome. Examples of topics students may choose include (but are not limited to):

- poverty
- world hunger
- food security
- food banks
- quotas
- access to safe food
- biotechnology
- fair trade
- farming practices
- organic foods
- local v. global foods

*“The role of education for sustainable development (ESD) is to help people develop the attitudes, skills, and knowledge to make informed decisions for the benefit of themselves and others, now and for the future, and to act upon those decisions.*

*ESD is an approach to teaching and learning based on the ideals and principles that underlie sustainability – human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and protection of indigenous cultures. In these and many other dimensions, education for sustainable development is analogous with the vision and goals of UNESCO.” — <http://www.unesco.ca> (downloaded December 2011)*

Health, and Poverty are two of the themes of Education for Sustainable Development. Students should begin to explore these issues and apply them to the context of food production and supply and demand.

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Social, Environmental, and Economic Influences.

# C CUL801B Career & Technical Education

---

## Culinary Skills

<b>FDS421A</b>	<b>CUL801A</b>	<b>CUL801B - Social, Environmental, &amp; Economic Influences</b>
<b>SCO</b> F.3 Describe the cultural origins of recipes, ingredients, and meal etiquette of a variety of ethnic, regional, and local cuisines, as represented in Canada.	<b>SCO</b> F.3 Prepare a meal using foods and preparation methods from a particular culture	<b>SCO</b> <b>F.3 Prepare a meal using foods and preparation methods from a particular culture</b>

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Research and discuss the foods of various cultures in Canada and around the World and their preparation.
- Research and discuss eating practice and table etiquette from a variety of cultures.
- Compare the foods, preparation methods, eating practices, and table etiquette of cultures in Canada and around the World.



## Elaboration

The purpose of this outcome is for students to develop an awareness of the wide range of ethnic and cultural customers related to food that are present in Canada and their local communities.

Students should research and discuss the foods of various cultures in Canada and around the World and their preparation such as:

- staple foods
- cooking methods
- utensils
- preserving
- storage methods

Students should research and discuss eating practice and table etiquette from a variety of cultures such as

- time of main meal
- religious practices
- eating utensils
- where food is eaten and with whom
- accepted behaviors

**This outcome is an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Social, Environmental, and Economic Influences. Students are expected to prepare a meal using foods and preparation methods from a particular culture, this should be completed within the context of the learning described in the Food Preparation outcomes G.1 - G.7.

**Please Note:** The specific curriculum outcome *Prepare a meal using foods and preparation methods from a particular culture* and achievement indicators for this outcome are the same in both CUL801A and CUL801B. To ensure that students enrolled in their third culinary course continue to develop their knowledge and skills related to this outcome, students should continue to show a deepening awareness in cultural issues surrounding food, and improvement in their skills preparing ethnic dishes.

# C CUL801B Career & Technical Education

---

## Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.1 Prepare baked goods by applying baking principles.	<b>SCO</b> G.1. Prepare complex batter and dough recipes by applying baking principles	<b>SCO</b> <b>G.1 Prepare baked goods (Third Course).</b>

### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Select ingredients according to recipes (e.g., safe handling and storage, grading, market availability, freshness, alternatives).
- Process ingredients according to recipes (e.g., use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredients, complementary ingredients).
- Cook ingredients (e.g., cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products).
- Prepare a variety of baked goods (e.g., yeast dough, quick breads, cakes, pies).

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Baking

**Trends** - Baked goods and desserts are varied and appeal to a number of different tastes and demands. Baked goods can be used in different meals and courses, from breakfast to appetizers, entrées to desserts. Desserts have adapted to multicultural cuisines and cultures. They can also be modified to meet people's dietary needs or special requests.

### **Task 30 - Prepares dough.**

*Dough is used to make items such as breads, pie shells, pastries, cookies, quick breads, sweet dough and savoury dough. It can be shaped and moulded to create designs. New flours and textures as well as additional ingredients can be introduced to provide variety.*

I-30.01 Selects ingredients for dough.

I-30.02 Mixes ingredients for dough.

I-30.03 Processes dough.

I-30.04 Cooks dough products.

### **Task 31 - Prepares batters.**

*Batters can be savoury or sweet, and can be used for many different applications that range from muffins to pâte à choux, genoise to cakes. Batters can be altered to suit customer requirements.*

I-31.01 Selects ingredients for batters.

I-31.02 Combines ingredients for batters.

I-31.03 Cooks batters.

**Related Tasks (Task 32 Prepares creams, mousses, frozen desserts, fillings, icings, toppings and sugar works, Task 33 - Prepares dessert sauces, Task 34 - Assembles cakes, Task 35 - Prepares pastries and pies,)**

For students to prepare and create baked goods it is important for them to begin to develop a deep understanding of nature of specific ingredients.

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

The creation and production quality baked products implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability if ingredients, and/or special dietary need.

**This both a performance outcome and an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.	<b>SCO</b> G.2. Create nutritious and flavorful dishes using egg and dairy products by applying cooking principles.	<b>SCO</b> <b>G.5 Create nutritious and flavorful dishes using fish, poultry and meat products by applying cooking principles.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of fish as an ingredient in cooking.
- Apply cooking principles to prepare and present fish dishes (e.g., cooking methods, building flavour).
- Demonstrate an understanding of poultry as an ingredient in cooking.
- Apply cooking principles to prepare and present poultry dishes (e.g., cooking methods, building flavour).
- Demonstrate an understanding of meat as an ingredient in cooking.
- Apply cooking principles to prepare and present meat dishes (e.g., cooking methods, building flavour).
- Select fish, poultry or meat products for use in recipes.
- Adapt fish, poultry or meat recipes to meet dietary needs.
- Create nutritious and flavourful dishes featuring fish, poultry or meat.

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Fish, Poultry, and Meats

### **Task 17 - Prepares meat and game meat.**

*Cooks prepare both domestic meat such as beef, pork, veal and lamb, as well as game meat such as bison, caribou and boar. Cooks must take particular care in their preparation in order to avoid waste. The preparation and cooking procedures of meat and game meat are similar.*

E-17.01 Selects meat and game meat.

E-17.02 Processes meat and game meat.

E-17.03 Cooks meat and game meat.

E-17.04 Carves meat and game meat.

### **Task 18 - Prepares poultry and game birds.**

*Cooks prepare both domestic poultry such as chicken and turkey, as well as game birds such as pheasant, quail and duck. The preparation of these is similar, though for many game birds the finishing temperature may be lower. This is because of the risks of contamination in domestic poultry and its requirement for high finishing temperatures to mitigate this risk.*

E-18.01 Selects poultry and game birds.

E-18.02 Processes poultry and game birds.

E-18.03 Cooks poultry and game birds.

E-18.04 Carves poultry and game birds.

### **Task 20 - Prepares fish.**

*There is a wide variety of fish, and freshness and quality is paramount. The cook must understand the importance of proper handling, storing, and preparation of many types of fish.*

F-20.01 Selects fish.

F-20.02 Processes fish.

F-20.03 Cooks fish.

F-20.04 Finishes fish.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Fish, Poultry, and Meats

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability if ingredients, and/or special dietary need.

**This outcome is both a performance outcome and an integrated outcome.**

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.	<b>SCO</b> G.6 Create nutritious and flavorful dishes featuring fruits and vegetables by applying cooking principles.	<b>SCO</b> <b>G.3. Create nutritious and flavorful dishes using a variety of pasta and grain products by applying cooking principles.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of fruits and vegetables as ingredients used in cooking.
- Apply cooking principles to prepare, cook and present quality fruit and vegetable dishes (e.g., cooking methods, building flavour).
- Select fruits and vegetables for use in recipes.
- Adapt fruit and vegetable recipes to meet dietary needs.
- Create nutritious and flavourful dishes featuring fruits and vegetables.

## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Fruits and Vegetables

**Trends** - There is a heightened awareness by the consumer of the health benefits of vegetables and fruits. Organic and certified organic vegetables and fruits are increasing in popularity. Many specialty vegetables and fruits are now available direct from the farmer giving cooks fresher produce to work with. There is an increasing popularity of various ethnic foods resulting in more demand of recipes containing vegetables, fruits as well as exotic ingredients. Fresh herbs and spices that are available from in-house gardens and local hot houses are becoming a larger part of the food service industry.

### **Task 12 - Prepares vegetables.**

*Vegetables are a main staple of all meals and it is essential for the cook to be able to select and process vegetables to retain quality, flavour and nutrients.*

C-12.01 Selects vegetables.

C-12.02 Cleans vegetables.

C-12.03 Cuts vegetables.

C-12.04 Finishes vegetables.

### **Task 13 - Prepares fruits.**

*Fruit is used in sauces and soups and as garnishes, showpieces and accompaniments. It is essential for the cook to be able to select and process fruit to retain quality, flavour, decoration and nutrients.*

C-13.01 Selects fruit.

C-13.02 Cleans fruit.

C-13.03 Cuts fruit.

C-13.04 Finishes fruit.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Fruits and Vegetables

As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability of ingredients, and/or special dietary need.

**This both a performance outcome and an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.

# C CUL801B

## Career & Technical Education

### Culinary Skills

FDS421A	CUL801A - Food Preparation	CUL801B - Food Preparation
<b>SCO</b> <b>G.2 Prepare healthy dishes and simple meals by examining and applying cooking principles.</b>	<b>SCO</b> <b>G.4. Create nutritious and flavorful salads and sandwiches by applying cooking principles.</b>	<b>SCO</b> <b>G.7 Create nutritious and flavorful soups, stocks, and sauces by applying cooking principles.</b>

#### Achievement Indicators

*Students who have achieved this outcome should be able to*

- Demonstrate an understanding of the varieties and characteristics of soups, stocks and sauces.
- Apply cooking principles to the planning, preparation, and presentation of soups (e.g., cooking methods, building flavour).
- Apply cooking principles to the planning and preparation of stocks (e.g., cooking methods, building flavour).
- Apply cooking principles to the planning and preparation of sauces (e.g., cooking methods, building flavour).
- Select soup, stock, or sauce recipes.
- Adapt soup, stock, or sauce recipes to meet dietary needs.
- Create nutritious and flavourful soups and sauces.



## Elaboration

Specific National Occupational Analyses (COOK 2011) Tasks and Sub-Tasks that relate to Soups, Stocks, and Sauces

### **Task 7 - Prepares stocks.**

*Cooks prepare stocks to provide the flavour and texture for soups and sauces. Selecting proper ingredients for the stock is a critical step in the preparation process. The ability to make stock is an essential skill for all cooks.*

B-7.01 Selects stock ingredients.

B-7.02 Processes stock ingredients.

### **Task 9 - Prepares soups**

*The ability to make soups is an essential skill for all cooks. Combining ingredients in the proper sequence is important in achieving quality results.*

B-9.01 Selects soup ingredients.

B-9.02 Processes soup ingredients.

B-9.03 Completes soups.

### **Task 10 - Prepares sauces**

*Preparing sauces is an important task since they accompany dishes, bring out flavours and enhance the appearance of the final product. Alcohol is an integral component in many sauces and must be handled properly.*

B-10.01 Selects sauce ingredients.

B-10.03 Processes sauce ingredients.

B-10.04 Completes sauces.

For students to create healthy and nutritious meals it is important for them to begin to develop a deep understanding of nature of specific ingredients. In FDS421A students were introduced to the various cooking principles and the effect of heat on common foods. It is the intent of this outcome to build on that experience and focus more particularly on the common food category of Soups, Stocks, and Sauces. As indicated by the NOA above, the ability to prepare food is broken into three main categories:

- **Selection of Ingredients** -- this includes safe handlings and storage, grading, market availability, freshness, and alternatives
- **Processing of Ingredients** -- this includes the use in cooking, a knowledge of traditional recipes, nutritional characteristics, use tools and equipment required to work with the ingredient, complementary ingredients.
- **Cooking (or finishing) of Ingredients** -- this includes, cooking methods, cooking times, determining doneness, sequencing within a recipes, handling and storage of finished products.

The creation and production of healthy, nutritious, and flavourful dishes implies the students will analyse the methods, ingredients, and techniques described within recipes and adapt recipes to suit either personal tastes, availability of ingredients, and/or special dietary need.

**This both a performance outcome and an integrated outcome** and therefore cannot be taught or learned in isolation from the outcomes identified under the topics of Food Preparation and Kitchen, Food Safety, and Kitchen Basics.

**This page has intentionally been left blank.**



Education and Early  
Childhood Development  
English Programs

# Prince Edward Island Technology Education Curriculum

**Career and Technical  
Education**

**Culinary Program  
Appendices**

**CURRICULUM**

**This page has intentionally been left blank.**

# **APPENDIX A**

## **Classroom Management**

**This page has intentionally been left blank.**

# **Safety Code of Conduct**

***We will respect others' right to work  
and learn in a safe environment.***

***We will report any safety concerns to the teacher.***

***We will wear appropriate clothing that will not be a safety hazard  
with kitchen equipment as well as wear protective oven mitts  
for handling hot equipment and gloves for handling hot ingredients.***

***We will maintain a clean and well organized kitchen.***

***We will ask for permission and/or instruction  
before using kitchen tools, equipment, or ingredients.***

***We will use common sense.***

# **Clean Up Duties**

## **Foreperson**

Call clean up with 15 mins left in class.  
Make sure that all of the jobs are completed properly.  
Fill in for any absences or areas that need extra attention.  
Report directly to the teacher.

## **Ingredient Clerk**

Put away all ingredients in the pantry and refrigerator.  
Report any ingredients that need replenishing to the Foreperson.  
Keep the pantry and refrigerator clean and organized.  
Report directly to the Foreperson.

## **Work Stations**

Help the Ingredient and Kitchen Equipment Clerks.  
Each station will require a team for washing the dishes, drying the dishes and putting them away.  
The team will also be responsible for cleaning the sinks, stove, and counters.  
The team will report directly to the Foreperson.



# **Clean Up Duties**

## **Kitchen Equipment Clerk**

Clean and return all equipment to their proper place.  
Report any missing or damaged equipment to the Foreperson  
Keep the equipment room neat and organized.  
Report directly to the Foreperson.

## **Spare**

Report directly to the Foreperson.  
Fill in for anyone who is absent.  
Help out in areas that require extra attention.

## **Sweepers**

Sweep each station after all counters and stoves have been cleaned.  
Straighten out all the desks and chairs.  
Report directly to the Foreperson.

	Foreperson	Ingredient Clerk	Kitchen Equipment Clerk	Workstations	Workstations	Workstations	Workstations	Workstations	Sweeper	Sweeper	Spare	Spare
<i><u>Student Roster</u></i>	<i><u>Class</u></i>											

## *Directory of Tools and Equipment Suppliers*

<u><i>Supplier</i></u>	<u><i>Contact</i></u>	<u><i>Address</i></u>	<u><i>Phone/Web</i></u>	<u><i>Products</i></u>

## *Directory of Food Products and Materials*

<u><i>Supplier</i></u>	<u><i>Contact</i></u>	<u><i>Address</i></u>	<u><i>Phone/Web</i></u>	<u><i>Products</i></u>

# **APPENDIX B**

## **Literacy Strategies**

**This page has intentionally been left blank.**

Name: \_\_\_\_\_

# Compare and Contrast

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

Topic A

Topic B

Are alike with regard to

Are different with regard to

<p><u>Topic A</u></p> <div style="border: 1px solid black; height: 400px;"></div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; height: 30px;"></div> <div style="border: 1px solid black; width: 80%; margin: 0 auto; height: 30px;"></div> <div style="border: 1px solid black; width: 80%; margin: 0 auto; height: 30px;"></div> <div style="border: 1px solid black; width: 80%; margin: 0 auto; height: 30px;"></div> <div style="border: 1px solid black; width: 80%; margin: 0 auto; height: 30px;"></div>	<p><u>Topic B</u></p> <div style="border: 1px solid black; height: 400px;"></div>
---	--	---

Name: \_\_\_\_\_

## Compare and Contrast

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

Topic

**Advantages**

**Disadvantages**



Name: \_\_\_\_\_

**Method/Ingredient Guide**

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<p><b><u>Supporting Detail</u></b></p>	<p><b><u>Supporting Resource</u></b></p>
<p><b><u>Ingredient or Method</u></b></p>	
<p><b><u>Supporting Detail</u></b></p>	<p><b><u>Supporting Sketch</u></b></p>

Name: \_\_\_\_\_

## Component Guide

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

Explanation of Topic

Component

Component

Component

Description/  
Supporting Detail

Description/  
Supporting Detail

Description/  
Supporting Detail

Name: \_\_\_\_\_

## *Anticipation Guide*

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<b>Response Before Reading</b>	<b><u>Anticipation Statements</u></b> Respond to each statement twice – once before reading and again after reading. Each time, write <i>A</i> if you agree with the statement or <i>D</i> if you disagree with the statement.	<b>Response After Reading</b>
_____		_____
_____		_____
_____		_____
_____		_____

Name: \_\_\_\_\_

**Know What Learn**

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

What I Already Know	What I Want to Know	What I Have Learned

Name: \_\_\_\_\_

**Know What How**

Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<b>Know</b> (Component)	<b>What</b> (Function)	<b>How</b> (Service / Diagnosis)

Name: \_\_\_\_\_ **Vocabulary Development** Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<u>List new words that are specific to the topic</u>	
<u>Examine the new words. Which do you find difficult to pronounce? Break them apart and write the parts below</u>	<u>List other words you know that relate to the new words.</u>
<u>Which of the new words is the most challenging to understand?</u>	<u>Choose one word. Why do you need to know this word? How will it be useful?</u>

Name: \_\_\_\_\_ **Vocabulary Development** Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<b>New Word</b>	<b>Description</b> (in my own words)	<b>Representation</b> (diagram / symbol)	<b>New Information</b>

Name: \_\_\_\_\_ *Vocabulary Development* Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<u>Term / Component</u>	<u>Visual Representation</u>
<u>Definition / Function</u>	

<u>Term / Component</u>	<u>Visual Representation</u>
<u>Definition / Function</u>	



Name: \_\_\_\_\_ **Vocabulary Development** Date: \_\_\_\_\_

**Title:** \_\_\_\_\_

<u>Vocabulary Term</u>	<u>Visual Representation</u>
<u>Definition</u>	<u>Personal Association</u>

<u>Vocabulary Term</u>	<u>Visual Representation</u>
<u>Definition</u>	<u>Personal Association</u>

**This page has intentionally been left blank.**

# **APPENDIX C**

## **Numeracy Strategies**

**This page has intentionally been left blank.**

## **Math in CTE**

Within the CTE curriculum there is a 7-step pedagogical process identified that will enable CTE teachers to identify the math skills covered in their lessons, develop a math-enhanced lesson and to assess the students math abilities.

1. **Introduce Technical Lesson**
  - Explain the technical lesson
  - Identify the math embedded in the lesson
2. **Assess students math awareness**
  - Formative assessment
  - Do students use the correct mathematical terms when discussing the lesson topic?
  - Use a variety of questioning /discussion techniques to determine students math awareness.
3. **Work through math problems embedded in the technical lesson.**
  - Connect the technical vocabulary to the math vocabulary and gradually integrate the two being sure to not abandon either set.
4. **Work through related contextual examples.**
  - Use examples with varying levels of difficulty.
  - Continue to bridge the gap between the technical concept and the math skills.
  - Check for understanding.
5. **Work through tradition math examples.**
  - Provide students with an opportunity to practice using a work sheet or basic math problems as they would appear on a test.
  - Move from basic to advanced examples.
  - Check for understanding.
6. **Students demonstrate understanding.**
  - Provide students with the opportunity to relate the math concept back to CTE Context.
  - Conclude the math examples back in the context of the technical lesson.
7. **Formal Assessment**
  - Include math problem into formal assessments of the technical lesson.

For more information on Math-in-CTE, sample templates, and lesson plans–visit the National Research Center for Career and Technical Education web site at (<http://www.nccte.org/>).

The sample lesson plans that follow were downloaded from the following web sites:

- National Research Center for Career and Technical Education (<http://www.nccte.org/>)
- Lane Education Service District, Oregon (<http://www.lanecareerfocus.org/>).

## Math in CTE Lesson Plan Template

Lesson Title:

Occupational Area:	Vocabulary / Terminology:
CTE Concepts:	
Math Concepts:	

Lesson Objective:
Supplies Required:
Resources (text, web, etc):

The 7-Elements	Teacher Notes / Answer Key
<u>1. Introduce Technical Lesson</u>	

<b>The 7-Elements</b>	<b>Teacher Notes / Answer Key</b>
<u>2. Assess Students' Math Awareness</u>	
<u>3. Math Problems Embedded in CTE Lesson</u>	

The 7-Elements	Teacher Notes / Answer Key
<p><b><u>4. Related Contextual Math Problems</u></b></p>	
<p><b><u>5. Traditional Math Problems</u></b></p>	



## Conversion Factors

### Angle

1 degree = 60 minutes

1 minute = 60 seconds

### Area

1 acre = 43,560 ft<sup>2</sup>

1 square foot = 144 square inches

1 square yard = 9 ft<sup>2</sup>

### Length (distance)

1 centimeter (cm) = .3937 inch (in)

1 inch (in) = 25.4 millimeters (mm)

1 foot (ft) = .3048 meters (m)

1 kilometer (km) = .62137 mile (mi)

1 meter (m) = 1.0936 yard (yd)

1 mile (mi) = 1.6093 kilometer (km)

1 mile = 5280 feet

1 millimeter (mm) = .03937 inch (in)

1 yard (yd) = .9144 meters (m)

### Mass

1 gram (g) = .035 ounce (oz)

1 kilogram (kg) = 2.20 pound (lb)

1 ounce (oz) = 28.35 gram (g)

1 pound (lb) = .45 kilogram (kg)

1 ton = 2000 pounds (lbs)

### Power

1 horsepower (hp) = 746 watts

1 horsepower (hp) = .746 kilowatt (kW)

1 kilowatt (kW) = 1.341 horsepower (hp)

### Pressure

1 kilopascal (kPa) = .14504 pounds per square inch (psi)

1 pounds per square inch (psi) = 6.8948 kilopascal (kPa)

### Time

1 minute = 60 seconds

1 hour = 60 minutes

### Torque

1 foot-pounds (ft-lb) = 1.36 Newton - meter (N-m)

1 Newton - meter (N-m) = .7376 foot-pounds (ft-lb)

### Speed

1 kilometers per hour (km/h) = .62 miles per hour (mph)

1 mile per hour (mph) = .447 meters per second (m/sec)

1 miles per hour (mph) = 1.16 kilometers per hour (km/h)

### Volume

1 cubic centimeters (cc) = 1 milliliters (ml)

1 cubic centimeter (cc) = .06102 cubic inches (in<sup>3</sup>)

1 cubic inch (cu-in) = .016387 liter (L)

1 cubic inch (in<sup>3</sup>) = 16,581.4 cubic millimeters (mm<sup>3</sup>)

1 cubic yard (yd<sup>3</sup>) = 27 cubic feet (ft<sup>3</sup>)

1 liter (L) = 1000 milliliters (ml)

1 liter ( L) = 1000 cubic centimeters (cc)

1 liter (L) = 1.0567 quart (qt)

1 liter (L) = 61.024 cubic inch (cu-in)

1 quart (qt) = .94635 liter (L)

## Math-in-CTE Rubric for Critiquing Lesson Plans

Lesson Title:	Lesson #
Author(s):	

*Please check the appropriate boxes in the rubric below. Use comment box to make suggestions/ recommendations.*

<b>ELEMENTS</b>	<b>COMPLETE</b>	<b>NEEDS IMPROVEMENT</b>	<b>COMMENTS</b>
1. Introduce the CTE Lesson.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Specific objectives of CTE lesson are explicit.</li> <li><input type="checkbox"/> Detailed script is provided for introducing lesson to students as a CTE lesson.</li> <li><input type="checkbox"/> The pulled-out math concept in embedded in the CTE lesson is clearly identified.</li> <li><input type="checkbox"/> Script is provided to point out the math in the CTE lesson.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lesson objectives are unclear or not evident.</li> <li><input type="checkbox"/> Little or no script is provided for introducing lesson to students.</li> <li><input type="checkbox"/> Math concept embedded in the CTE lesson is not pulled-out or made clear.</li> <li><input type="checkbox"/> Script is not provided to point out the math in the CTE lesson.</li> </ul>	
2. Assess students' math awareness as it relates to the CTE lesson.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lesson contains learning activities and/or well developed questions that assess <u>all</u> students' awareness of the embedded math concept.</li> <li><input type="checkbox"/> Math vocabulary and supporting instructional aids are provided to begin bridging of math to CTE.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Script has short list of phrases; no learning activities or questions that support assessment of all students' awareness of the embedded math concept.</li> <li><input type="checkbox"/> Math vocabulary and/or instructional aids are not provided.</li> </ul>	
3. Work through the math example <b>embedded</b> in the CTE lesson.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Script provides specific steps/processes for working through the embedded math example.</li> <li><input type="checkbox"/> CTE and math vocabulary are explicitly bridged in the script, supported with instructional strategies and aids.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Steps/processes for working through the embedded math example are incomplete or missing.</li> <li><input type="checkbox"/> Little bridging of CTE and math vocabulary is scripted; few or no strategies and aids are provided to relate the CTE to math.</li> </ul>	

<p>4. Work through the <b><i>related, contextual</i></b> examples.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lesson provides a work-through of similar examples, using the same embedded math concept in examples from the same occupational area.</li> <li><input type="checkbox"/> Example problems are at varying levels of difficulty, from basic to advanced.</li> <li><input type="checkbox"/> Script continues to bridge the CTE and math vocabulary, supported with instructional strategies and/or aids.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Few or no additional examples of the embedded concept are provided.</li> <li><input type="checkbox"/> Examples do not reflect varying levels of difficulty.</li> <li><input type="checkbox"/> Little or no bridging of CTE and math vocabulary is evident in the script or supported with instructional strategies and/or aids.</li> </ul>	
<p>5. Work through <b><i>traditional math</i></b> examples.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> A variety of examples are scripted to illustrate the math concept as it is presented in traditional math tests.</li> <li><input type="checkbox"/> Examples move from basic to advanced.</li> <li><input type="checkbox"/> Script continues to bridge the CTE and math vocabulary, supported with instructional strategies and/or aids.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Few or no math problems illustrate the math concept as it is presented in standardized tests.</li> <li><input type="checkbox"/> Examples do not reflect varying levels of difficulty.</li> <li><input type="checkbox"/> Little or no bridging of CTE and math vocabulary is evident in the script or supported with instructional strategies and/or aids.</li> </ul>	
<p>6. Students demonstrate understanding.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lesson provides learning activities, projects, etc., that give students opportunities to demonstrate what they have learned.</li> <li><input type="checkbox"/> Lesson ties math examples back to the CTE content; lesson ends on the CTE topic.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> No learning activities, projects, etc., provide students with opportunities to demonstrate what they have learned.</li> <li><input type="checkbox"/> Lesson fails to tie the math back to CTE or end on the CTE topic.</li> </ul>	
<p>7. Formal assessment.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lesson provides questions/problems that will be included in formal assessments (tests, projects, etc.) in the CTE unit/ course.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Example questions/problems are not provided for use in formal assessments in the CTE unit/course.</li> </ul>	

## Math-in-CTE Lesson Plan Template

<b>Lesson Title:</b> Portion Sizes Using Linear Equations		<b>Lesson #</b> 1
<b>Author(s):</b>	<b>Phone Number(s):</b>	<b>E-mail Address(es):</b>
Shan Wattenburger	(541)416-6900	<a href="mailto:shan.wattenburger@crookcounty.k12.or.us">shan.wattenburger@crookcounty.k12.or.us</a>
Kristen Maholland	(541)416-6900	<a href="mailto:kristen.maholland@crookcounty.k12.or.us">kristen.maholland@crookcounty.k12.or.us</a>
<b>Occupational Area:</b> Culinary		
<b>CTE Concepts:</b> Culinary Standard B1, B3, B4 – Weights and measures		
<b>Math Concepts:</b> Algebra H.2A.7 – solving linear equations with one and two variables		
<b>Lesson Objective:</b>	Students will be able to write, use, and solve one and two variable equations.	
<b>Supplies Needed:</b>	6 oz cans of tomato paste (one can per student or pair of students), spatulas, scales, parchment paper cut into 6 inch squares, and attached worksheets	

THE "7 ELEMENTS"	TEACHER NOTES (and answer key)
<p><b>1. Introduce the CTE lesson.</b></p> <p>This lesson will develop student's ability to write, use, and solve linear equations. Students will find portion sizes from a can of tomato paste.</p> <p>"Today we are going to learn how to find the number of exact portions that we can get out of a 6oz can of tomato paste using various portion sizes. You will be able to do this by using one and two variable equations. We will learn how to write, use, and solve these equations together. In the restaurant industry you must weigh and measure exact portions to control your profits. Institutionalized food service industry does not allow estimation when it comes to portion sizes!"</p>	<p>Some teachers may want to review the fact that there is a difference between estimating portion sizes at home and the need to measure or weigh exact amounts in the industry. Some estimate examples might include: a deck of cards being equal to one portion of meat, a tennis ball equals one portion of fruit, and a compact disc would represent a portion of salad.</p> <p>There is a related article attached at the bottom of this packet titled "<a href="#">How to Pick the Perfect Portion</a>" taken from the website <a href="http://www.foodnetwork.com">www.foodnetwork.com</a> .</p>
<p><b>2. Assess students' math awareness as it relates to the CTE lesson.</b></p> <p>The following questions will assess student awareness of one and two variable equations. Present these questions to the class as visuals on the board.</p>	

## Math-in-CTE Lesson Plan Template

<b>Lesson Title:</b> Portion Sizes Using Linear Equations		<b>Lesson #</b> 1
<b>Author(s):</b>	<b>Phone Number(s):</b>	<b>E-mail Address(es):</b>
Shan Wattenburger	(541)416-6900	<a href="mailto:shan.wattenburger@crookcounty.k12.or.us">shan.wattenburger@crookcounty.k12.or.us</a>
Kristen Maholland	(541)416-6900	<a href="mailto:kristen.maholland@crookcounty.k12.or.us">kristen.maholland@crookcounty.k12.or.us</a>
<b>Occupational Area:</b> Culinary		
<b>CTE Concepts:</b> Culinary Standard B1, B3, B4 – Weights and measures		
<b>Math Concepts:</b> Algebra H.2A.7 – solving linear equations with one and two variables		
<b>Lesson Objective:</b>	Students will be able to write, use, and solve one and two variable equations.	
<b>Supplies Needed:</b>	6 oz cans of tomato paste (one can per student or pair of students), spatulas, scales, parchment paper cut into 6 inch squares, and attached worksheets	

THE "7 ELEMENTS"	TEACHER NOTES (and answer key)
<p><b>1. Introduce the CTE lesson.</b></p> <p>This lesson will develop student’s ability to write, use, and solve linear equations. Students will find portion sizes from a can of tomato paste.</p> <p>“Today we are going to learn how to find the number of exact portions that we can get out of a 6oz can of tomato paste using various portion sizes. You will be able to do this by using one and two variable equations. We will learn how to write, use, and solve these equations together. In the restaurant industry you must weigh and measure exact portions to control your profits. Institutionalized food service industry does not allow estimation when it comes to portion sizes! ”</p>	<p>Some teachers may want to review the fact that there is a difference between estimating portion sizes at home and the need to measure or weigh exact amounts in the industry. Some estimate examples might include: a deck of cards being equal to one portion of meat, a tennis ball equals one portion of fruit, and a compact disc would represent a portion of salad.</p> <p>There is a related article attached at the bottom of this packet titled <a href="#">“How to Pick the Perfect Portion”</a> taken from the website <a href="http://www.foodnetwork.com">www.foodnetwork.com</a> .</p>
<p><b>2. Assess students’ math awareness as it relates to the CTE lesson.</b></p> <p>The following questions will assess student awareness of one and two variable equations. Present these questions to the class as visuals on the board.</p>	

<p>Q1. What is an equation?                  Q2. What is a variable?                  Q3. What are the variables in the equation <math>y=4x</math>?                  Q4. Can you solve for y in the equation <math>y = 2(4)</math>?                  Q5. Can you solve for x in the equation <math>8 = 2(x)</math>?                  Q6. Can you solve for x in the equation <math>y = 2(x)</math> if you are told that y is equal to 10?                  Q7. Can you solve for y in the equation <math>y = 3(x)</math> if you are told that x is equal to 12?                  Q8. Solve for y in the equation <math>2y = 14</math>.                  Q9. Write an equation to represent the following situation: What is three times five?                  Q10. What is a “portion”?</p> <p>Teacher can now let the students work through the supplemental problems on worksheet 1, Balancing Equations, to be sure that they can write, use, and solve basic linear equations. This worksheet can be used as an assessment.</p>	<p>A1. An equation is a mathematical sentence with an equal (=) sign such as <math>y = 4x</math>.                  A2. A variable is a letter or symbol that represents a number.                  A3. The variables are “y” and “x”.                  A4. <math>y = 8</math>                  A5. Divide both sides by 2 to get <math>x = 4</math>                  A6. Substitute 10 in for the y to get the equation <math>10 = 2(x)</math>. Divide both sides by 2 and x will equal 5.                  A7. Substitute the 12 in for x to get the equation <math>y = 3(12)</math>. The y will equal 36.                  A8. Divide both sides by 2 to get <math>y = 7</math>.                  A9. <math>y = 3(5)</math>                  A10. A portion is a standardized measurement of a food or drink determined by the USDA.</p> <p>The following worksheet can be used for an assessment (answers to worksheet are also included).</p> <p><a href="#">( Wkst 1: Balancing equations ).</a></p>
<p><b>3. Work through the math example embedded in the CTE lesson.</b></p> <p>The math example embedded in this CTE lesson asks how many portions of various sizes there are in varying numbers of 6 oz cans of tomato paste.</p> <p>Q1) Ask students to write the general equation that would represent the relationship between the number of portions and the number of 6 oz cans of tomato paste. Tell them that “y” will represent the number of portions and “x” will represent the number of 6 oz cans.</p> <p>Q2) Have the students write an equation to find how many 1 oz portions they could get out of 1 can of paste and solve for y.</p> <p>Q3) Ask students to find the number of 2 oz portions that they can get from 1 can of paste.</p> <p>Q4) Ask students to find the number of 3 oz portions that they can get from 1 can of paste.</p>	<p>There is an optional worksheet for solving equations with symbols attached to this lesson (answers to worksheet are also included).</p> <p><a href="#">( Wkst 2: Balancing equations using symbols ).</a></p> <p>A1) The general equation for 6 oz cans would be: <math>y = 6(x)</math>.</p> <p>A2) Equation for finding the number of 1 oz portions from 1 x 6 oz can would be: <math>y = 6(1)</math> so y would equal 6.</p> <p>A3) Equation for finding the number of 2 oz portions from 1 x 6 oz can would be: <math>2y = 6(1)</math>. Divide both sides by 2 to get <math>y = 3</math>.</p>

<p>Q5) Have the students write an equation to find how many 1 oz portions they could get out of 2 cans of paste and solve for y.</p> <p>Q6) Ask students to find the number of 2 oz portions that they can get from 2 cans of paste.</p> <p>Q7) Ask students to find the number of 3 oz portions that they can get from 2 cans of paste.</p> <p>Activity: Students will now refer back to the equations and answers that they wrote from section 3 of this lesson to see if the physical results match the mathematical results.</p> <p>Students will physically weigh out exact portions of tomato paste in the serving amounts of 1 oz, 2 oz, and 3 oz.</p>	<p>A4) Equation for finding the number of 3 oz portions from 1 x 6 oz can would be: <math>3y = 6(1)</math>. Divide both sides by 3 to get <math>y = 2</math>.</p> <p>A5) Equation for finding the number of 1 oz portions from 2 x 6 oz cans would be: <math>y = 6(2)</math> so y would equal 12.</p> <p>A6) Equation for finding the number of 2 oz portions from 2 x 6 oz cans would be: <math>2y = 6(2)</math>. Divide both sides by 2 to get <math>y = 6</math>.</p> <p>A7) Equation for finding the number of 3 oz portions from 2 x 6 oz cans would be: <math>3y = 6(2)</math>. Divide both sides by 3 to get <math>y = 4</math>.</p> <p>Notes for Activity: Students will weigh paste onto parchment paper in order to keep the scales clean.</p> <p>Students should zero out the scale with the parchment paper on it before each weight is taken.</p> <p>Set each portion aside after each weight is taken.</p> <p>Label each portion with the weight.</p> <p>Have students keep track of weights / number of portions on their assignment paper.</p> <p>Use a new can of paste for each set of the varied portion sizes.</p>
<p><b>4. Work through <i>related, contextual math-in-CTE examples.</i></b></p> <p>Ask students to write and then solve equations for the following questions:</p> <p>Q1) How many 4 oz portions could a person get from a 416 oz watermelon?</p> <p>Q2) If a chef needs 7 portions of peaches that are 3 oz each, how many ounces of peaches does the chef need to start with?</p>	<p>Teachers may want to link to a video on measuring portion sizes on YouTube titled <a href="#">"Portion Sizes Part 1"</a> and <a href="#">"Portion Sizes Part 2"</a>.</p> <p>A1) <math>416 = 4(x)</math> Divide both sides by 4 to get 104 portions.</p> <p>A2) <math>y = 3(7)</math> The chef needs 21 oz to start with.</p>

<p><b>5. Work through <i>traditional math</i> examples.</b></p> <p>Solve the following equations for “x”:</p> <p>Q1) <math>8 = 4x</math></p> <p>Q2) <math>4x = 12</math></p> <p>Q3) <math>6y = 2(x)</math> if “y” is equal to 3.</p> <p>Q4) <math>60y = 30x</math> if “y” is equal to 2.</p>	<p>There is an optional website for solving equations at:  <a href="http://www.gamequarium.com/equations.html">http://www.gamequarium.com/equations.html</a></p> <p>A1) Divide both sides by 4 so that “x” is equal to 2.</p> <p>A2) Divide both sides by 4 so that “x” is equal to 3.</p> <p>A3) Substitute the 3 in for “y” to get <math>6(3) = 2x</math> or <math>18 = 2x</math> and then divide both sides by 2 to get “x” = 9.</p> <p>A4) Substitute the 2 in for “y” to get <math>60(2) = 30(x)</math> or <math>120 = 30(x)</math> and then divide both sides by 30 to get “x” = 4.</p>
<p><b>6. Students demonstrate their understanding.</b></p> <p>Students should be work through the following problem without assistance from the teacher. This can be presented visually on the board.</p> <p>Q) If a recipe calls for 5 oz portions of coconut, how many portions could you get from 10 bags of coconut if each bag weighs 6oz?</p>	<p>A) <math>5y = 6(10)</math> Multiply the 6 and 10 to get <math>5y = 60</math> and then divide both sides by 5. There would be 12 portions of 6 oz each.</p>
<p><b>7. Formal assessment.</b></p> <p>Students must show all work in order to get credit.</p> <p>Q1) Write an equation to represent the following scenario: How many ounces of lasagna does a chef need to begin with if he needs to serve 20 portions, each of which must be 4 oz.</p> <p>Q2) Solve the equation above for the amount of lasagna that the chef needs to start with.</p> <p>Q3) Write an equation to represent the following scenario: how many 6 oz portions could a chef get from 3 pitchers that each contain 360oz of punch?</p> <p>Q4) Solve the equation above for the number of portions that the chef will be able to serve.</p>	<p>A1) <math>y = 20(4)</math></p> <p>A2) <math>y = 80</math> oz</p> <p>A3) <math>6y = 3(360)</math></p> <p>A4) Multiply the 3 and the 360 and then divide both sides by 6 to get “y” = 180 portions.</p>



## Wkst 1: Balancing Equations

Name: \_\_\_\_\_

Solve the equations below and write the algebraic steps. The first one is done for you.

$4x = 24$

$6n = 48$

$3x = 15$

$4x \div 4 = 24 \div 4$

$1x = 6$

$x = 6$

$3x = 18$

$5n = 15$

$3a = 39$

$7b = 49$

$10x = 70$

$8n = 72$

$2a = 42$

$6n = 96$

$11b = 99$

# How to Pick the Perfect Portion

3 easy ways to lose weight and keep it off

By RealAge

Page 1 of 1

When it comes to food portions, Americans are definitely living in a supersized world. Portion sizes have increased dramatically over the past 20 years, so those huge, calorie-laden servings we once couldn't finish no longer seem excessive.

We've become so accustomed to large portions at fast-food joints and many of our favorite restaurants that, as a result, we've followed suit in the amount of food we dish up for ourselves at home. And, unfortunately, our waistlines are keeping pace -- expanding right along with our appetites.

But the solution is simple: Readjust your food goggles so you can spot a sensible serving size. And remember -- bigger isn't always better. Here are three tips to help:

## 1. Retrain Your Eyes

Whether you are trying to lose weight or simply maintain your current weight, making the right decisions about the amount of food you eat is just as important as the kinds of food you eat. And here's a bonus: **Opting for reasonable portions allows you to eat the foods you enjoy and still take off pounds.**

The first step is to retrain your eyes to recognize the difference between a healthy serving and a hefty one.

Take a look at this visual-comparison table to get a better sense of what proper serving sizes look like:

### Healthy Serving Size

### Healthy Serving Size

3 ounces lean meat, chicken, or fish;

= A deck of cards

1.5 ounces of cheese

= 4 playing dice

Baked potato	=	Your fist
½ cup of ice cream/frozen yogurt	=	1/2 tennis ball
1 pancake	=	A compact disc (CD)
½ of a 3-inch bagel	=	A can of tuna

Source: National Heart, Lung, and Blood Institute (NHLBI)

### Tableware

### Tip

Are your dishes more like platters than plates? Try serving meals on smaller (9-inch) plates instead of large dinner plates. You'll satisfy that psychological need for a full plate of food, but you'll be eating more reasonably sized portions.

## 2. Don't Be Fooled by Food Labels

Comparing food labels before you buy is another good way to make healthier portion picks. But beware -- **a quick glance at a label might not give you the whole story**. Here's why: If you're like most of us, you check the calorie listing first. That's fine, but it's also important to **check the serving size listed on the label**.

Take, for example, two packages of cookies:

- Cookie A lists 160 calories per serving.
- Cookie B lists 80 calories per serving.

Easy decision, right? Not so fast, cookie monster. Look closer and you'll see that a serving size for cookie A equals three cookies, while a serving of cookie B equals just one cookie. [Become a food-label expert in no time with this tool.](#)

## 3. Check Nutrition Information on Menus

Eating out doesn't mean you have to forgo proper portions. Many popular chain restaurants now provide nutrition information on their menus, so pay attention to the details, and choose wisely.

[Check out our rundown of the best and worst choices at five popular restaurant chains.](#)

But at other restaurants, where huge portions are the norm and menus don't include nutrition info, the choice may not be so clear. An easy way to cut calories when dining out is to **order a child- or appetizer-size plate, split a starter and main dish with your companion, or ask**

for a **doggy bag** when your order arrives (rather than at the end of the meal), so you can put aside part of your portion up front.

Putting these steps into practice will help keep you from overeating without realizing it.

So go ahead and treat yourself to an ice cream cone or a couple of cookies from time to time. If you do it in moderation, it won't derail your healthy diet, and it'll be easier to stick to a healthful eating plan if you get to include foods you enjoy.

By becoming mindful of proper portions, you'll be well on your way to healthier eating habits that can help you not only lose weight but also keep it off for good.

### Video



[Watch this 60-second video on how to dish up just-right portions.](#)

## ANSWERS Wkst 1: Balancing Equations

Name: \_\_\_\_\_

Solve the equations below and write the algebraic steps. The first one is done for you.

$4x = 24$

$6n = 48$

$3x = 15$

$4x \div 4 = 24 \div 4$

$n = 8$

$x = 5$

$1x = 6$

$x = 6$

$3x = 18$

$5n = 15$

$3a = 39$

$x = 6$

$n = 3$

$a = 13$

$7b = 49$

$10x = 70$

$8n = 72$

$b = 7$

$x = 7$

$n = 9$

$2a = 42$

$6n = 96$

$11b = 99$

$a = 21$

$n = 16$

$b = 9$

# Math-in-CTE Lesson Plan Template

Lesson Title: Recipe Conversion	Lesson # 1(2 days)
---------------------------------	-----------------------

Author(s): Donna Carter Sarah Melonuk	Phone Number(s): 541 929-3211 541 929-3211	E-mail Address(es): <a href="mailto:donna.carter@philomath.k12.or.us">donna.carter@philomath.k12.or.us</a> <a href="mailto:sarah.melonuk@philomath.k12.or.us">sarah.melonuk@philomath.k12.or.us</a>
---	--	---

	CTE Concept: Converting recipes for desired yield	
Occupational Area: Culinary Arts	CTE Lesson Objective: TSWBAT successfully increase or decrease recipe yield using the appropriate conversion factor. TSWBAT demonstrate ability to bake quick breads using a recipe with converted yields	
Supplies: worksheets, examples for board, recipes, lab supplies/ingredients	Math Concepts: Multiplying fractions and decimals (and converting between the two)	

THE "7 ELEMENTS"	TEACHER NOTES (and answer key)
<p><b>1. Introduce the CTE lesson.</b></p> <p>(show a large volume recipe) Stacy found this wonderful recipe that she is excited to make but it serves 75. What can we do to make it work for our group of six? (various answers)</p> <p>Recipe conversion is an important skill for successful work in the kitchen. What do we mean by recipe conversion? What are some of the situations where you may need to convert a recipe in order to change the yield? (allow for discussion)</p>	<p>Yield – number of portions or servings a recipe makes.</p> <p>Recipe conversion – increasing or decreasing the yield of a recipe.</p> <p>Situations requiring recipe conversions:</p> <ul style="list-style-type: none"> <li>• Need more or less of the product</li> <li>• You don't have as much of a single ingredient as the recipe calls for so all the other ingredients need to be adjusted as well.</li> </ul>

—( MATH-IN-CTE )—

<p>So, how would we convert our recipe in order to meet our needs? (allow for discussion) Yes, we'll be working with multiplying fractions and decimals.</p>	<ul style="list-style-type: none"> <li>You have a different pan size as what the recipe calls for so the recipe has to be adjusted to accommodate the pan.</li> </ul>
<p><b>2. Assess students' math awareness as it relates to the CTE lesson.</b></p> <p>In this class, recipe conversion is a review of basic math calculations with <b>fractions and decimals</b>.</p> <p>Each student calculates the recipe conversion on the worksheet and converts between fractions, decimals, and percents*.</p> <p>Volunteer student to show work on the board. Discuss/answer questions.</p> <p>Demonstrate proper form (ie 3/4)</p>	<p>Worksheet #1/Answer Key</p> <p><b>Denominator = bottom number</b></p> <p><b>Numerator = top number</b></p> <p>*Can take percent out of the lesson or leave percent in the lesson and talk about it as an equivalent with fractions and decimals.</p>
<p><b>3. Work through the math example <i>embedded</i> in the CTE lesson.</b></p> <p>Correct measurements are essential for the success of your recipes in the lab (and at home).</p> <p>We'll be looking at work with fractions and decimals.</p> <p>Review math calculations:</p> <ul style="list-style-type: none"> <li>multiplying fractions  <math>2/3 \times 6/5 = 12/15</math> <b>(4/5)</b>            Include improper fractions and mixed numbers (ie <math>6/5 = 1 \frac{1}{5}</math>)</li> <li>multiplying with decimals  <math>50 \times 1.3 = 65.3</math></li> </ul>	<p><b>Fractions:</b>            When multiplying fractions = numerator X numerator, divided by, denominator x denominator</p> <p>Improper fraction – numerator is larger than denominator</p> <p>Mixed number – whole number and a fraction</p> <p><b>Decimals:</b>            Multiply the numbers. Insert the decimal so</p>

Teacher to explain the conversion factor (also called **scale factor and/or magnitude**).

Example: (from worksheet #1)

Original recipe yields 24 servings; desired yield is 72

conversion factor equals  $72/24 = 3/1$

Original Yield: 24 servings

Desired yield: 72

### Ingredient

### Amount

### New Yield

Flour

2 Cups

$$2/1 \times 3/1 = 6/1 =$$

**6 c.**

Sugar

$\frac{3}{4}$  Cup

$$\frac{3}{4} \times 3/1 = 9/4 =$$

**2  $\frac{1}{4}$  c.**

Brown Sugar

$\frac{3}{8}$  Cup

that there are as many spaces to the right of the decimal in the answer as in the original problem.

### Determine Conversion Factor:

1. Decide how many servings you need.
2.  $\frac{\text{Desired yield}}{\text{Original yield}} = \text{conversion factor (number to multiply ingredients by)}$   
Original yield
1. Multiply each ingredient by the conversion factor
2. As needed, convert answers to logical, measurable amounts.
3. Make necessary adjustments to equipment, temperature, and time.

Source: ProStart text, pg. 188

Worksheet #2/Answer Key



$$\frac{3}{8} \times \frac{3}{1} = \frac{9}{8} =$$

**1 1/8 c.**

Butter

1/2 Cup

$$\frac{1}{2} \times \frac{3}{1} = \frac{3}{2} =$$

**1 1/2 c.**

Baking Soda

3/4 tsp.

$$\frac{3}{4} \times \frac{3}{1} = \frac{9}{4} =$$

**2 1/4 tsp.**

Salt

1/4 tsp.

$$\frac{1}{4} \times \frac{3}{1} = \frac{3}{4}$$

**3/4 tsp.**

Oatmeal

2/3 Cup

$$\frac{2}{3} \times \frac{3}{1} = \frac{6}{3} =$$

**2 c.**

Chocolate Chips

1 Cups

$$\frac{1}{1} \times \frac{3}{1} = \frac{3}{1} =$$

**3 c.**

Students complete worksheet #2 with sample problems.

**Make sure the answers are in a measurable form.**

### Measurable form:

Answers must correspond to available measuring tools in the lab (5/8 c. = 1/2 c. + 2 T.)

(have measuring cups/spoons and equivalents chart from previous lesson on each table)

Possible discussion questions:

As a result of changing your recipe.....

What changes may need to be made to the cooking time?

What changes may need to be made to the cooking temperature?

What equipment changes may need to be made?

Math problem solving – select the most appropriate format for the recipe provided. With recipes using standard measuring equipment use the conversion factor in a fraction format. With recipes using weights, use the conversion factor in a decimal format.

**4. Work through *related, contextual* math-in-CTE examples.**

Converting portion size

When? -- Customers may complain that portions are too small or perhaps the portion is so large that it's resulting in little or no profit margin.

So it is at times necessary to know how to convert the portion size as well as the recipe yields.

**Steps in converting portion size:**

1. To determine the total existing yield, multiply the number of existing portions by the existing size of each portion.  
 $15 \text{ (portions)} \times 5 \text{ oz. (size)} = 75 \text{ oz. (existing yield)}$
2. To determine a new yield, multiply the desired portions by the desired size.  
 $20 \text{ (portions)} \times 8 \text{ oz. (size)} = 160 \text{ oz. (new yield)}$
3. Divide new yield by existing yield to get the conversion factor.  
 $160 \text{ (new)} \div 75 \text{ (existing yield)} = 2.13$   
(conversion factor)
4. Multiply each ingredient in the existing recipe by the conversion factor to get the new ingredient amount.



<b>7. Formal assessment.</b> Successful preparation of product. Formal evaluation (unit test)	

# **APPENDIX D**

## **Outcome Reference Chart**

**This page has intentionally been left blank.**

## Curriculum Outcome Quick Reference Chart

Topic	FDS421A	CUL801A	CUL801B
<b>A. Career Awareness</b>	A.1. Analyse skills and knowledge required for successful employment in food-related occupations.	A.1. Create a learning plan to chart the growth and acquisition of personal skills required for employment in food related occupations.	A.1. Create a learning plan to chart the growth and acquisition of personal skills required for employment in food related occupations.
<b>B. Meal Service</b>	B.1. Evaluate the preparation and execution of a small scale/family meal service.	B.1. Analyse the preparation and execution of a meal service.	B.1. Evaluate the preparation and execution of a meal service.
<b>C. Kitchen and Food Safety</b>	C.1. Apply safe food handling, storage and preparation methods.  C.2. Apply appropriate precautionary measures associated with food preparation.	C.1. Apply safe food handling, storage and preparation methods.  C.2. Apply appropriate precautionary measures and emergency response associated with food preparation.	C.1. Apply safe food handling, storage and preparation methods.  C.2. Apply appropriate precautionary measures and emergency response associated with food preparation.
<b>D. Kitchen Basics</b>	D.1 Demonstrate kitchen organization and collaboration in partner and group work, including integration of planning skills.  D.2. Analyse and execute a recipe using appropriate equipment and measuring techniques.  D.3. Demonstrate competence when using a variety of kitchen tools and equipment for preparing foods.  D.4. Demonstrate the use of effective knife skills.	D.1. Collaborate to create implementation plans for task sequencing, time management, and kitchen management.  D.2. Evaluate recipes that require the use of a variety of food preparation techniques.  D.3. Compare various types of equipment used for food preparation.  D.4. Demonstrate the use of effective knife skills.	D.1. Collaborate to create implementation plans for task sequencing, time management, and kitchen management.  D.2. Evaluate recipes that require the use of a variety of food preparation techniques.  D.3. Evaluate new technologies available for food preparation.  D.4. Demonstrate the use of effective knife skills.

## Curriculum Outcome Quick Reference Chart

Topic	FDS421A	CUL801A	CUL801B
<b>E. Nutrition and Food Science</b>	<p>E.1. Examine the science of nutrition.</p> <p>E.2. Analyse the relationship of nutrition to health and well being.</p> <p>E.3. Create nutritious menus for a variety of dietary and budget considerations using <i>Eating Well with Canada's Food Guide</i>.</p>	<p>E.1. Analyse healthy balanced food service menus for a variety of dietary and budget considerations.</p>	<p>E.1. Evaluate healthy balanced food service menus for a variety of dietary and budget considerations.</p>
<b>F. Social, Economic, and Cultural Influences</b>	<p>F.1. Analyse comparative costs and nutritional value of convenience, restaurant, and self-prepared foods.</p> <p>F.2. Identify factors that affect food production and supply.</p> <p>F.3. Describe the cultural origins of recipes, ingredients, and meal etiquette of a variety of ethnic, regional, and local cuisines, as represented in Canada.</p>	<p>F.1. Analyse the effect of food marketing practices on consumer behavior.</p> <p>F.2. Evaluate food choices based on social, environmental, and economic factors.</p> <p>F.3. Prepare a meal using foods and preparation methods from a particular culture.</p>	<p>F.1. Create a marketing strategy for a food product.</p> <p>F.2. Evaluate food choices based on social, environmental, and economic factors.</p> <p>F.3. Prepare a meal using foods and preparation methods from a particular culture.</p>
<b>G. Food Preparation</b>	<p>G.1. Prepare baked goods by applying baking principles.</p> <p>G.2. Prepare healthy dishes and simple meals by examining and applying cooking principles.</p>	<p>G.1. Prepare complex batter and dough recipes by applying baking principles</p> <p>G.2. Create nutritious and flavorful dishes using egg and dairy products by applying cooking principles.</p> <p>G.3. Create nutritious and flavorful dishes using a variety of pasta and grain products by applying cooking principles.</p> <p>G.4. Create nutritious and flavorful salads and sandwiches by applying cooking principles.</p>	<p>G.1. Prepare baked goods.</p> <p>G.5. Create nutritious and flavorful dishes using fish, poultry and meat products by applying cooking principles.</p> <p>G.6. Create nutritious and flavorful dishes featuring fruits and vegetables by applying cooking principles.</p> <p>G.7. Create nutritious and flavorful soups, stocks, and sauces by applying cooking principles.</p>