

# **FOOD SCIENCE AND TECHNOLOGY**

## **Unit 2A Hospitality**

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## Teaching and Learning Program – Food Science and Technology (Hospitality)

### Unit 2A: Food for entertainment and leisure

#### Unit learning focus: Cultural dining

WEEK	CONTENT	LEARNING EXPERIENCES	RESOURCES	ASSESSMENT
1	<p>Quality and safe food requirements e.g. appropriate clothing and footwear, safe food handling procedures, personal behavior, personal hygiene relevant to health conditions and illnesses</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p> <p>Food industry specific terminology</p>	<ul style="list-style-type: none"> <li>• Introduction to unit               <ul style="list-style-type: none"> <li>○ expectations and requirements</li> <li>○ developing good study habits</li> <li>○ reading list</li> </ul> </li> <li>• Provide students with               <ul style="list-style-type: none"> <li>○ syllabus document 2A p.24-25</li> <li>○ unit outline</li> <li>○ assessment outline</li> <li>○ school assessment policy</li> <li>○ grade descriptors</li> </ul> </li> <li>• Discuss safe food handling practices               <ul style="list-style-type: none"> <li>○ appropriate clothing and footwear</li> <li>○ safe food handling procedures</li> <li>○ cross contamination-danger zone</li> <li>○ personal behaviour</li> <li>○ personal and environmental hygiene relevant to health conditions and illness</li> </ul> </li> <li>• Discuss first aid procedures in the kitchen including evacuation procedures</li> <li>• Briefly discuss new food industry specific terminology and career opportunities in hospitality</li> <li>• Definitions               <ul style="list-style-type: none"> <li>○ food science</li> <li>○ food processing</li> <li>○ commodity groupings</li> <li>○ physical properties e.g. texture, shape, size, viscosity and colour</li> <li>○ sensory properties e.g. appearance, aroma,</li> </ul> </li> </ul>	<p>Curriculum Council Assessment requirements, glossary sheet, resource list.</p> <p>Video: Safety in Food Handling, (2003) Video Education Australasia VEA.</p> <p>The Department of Health QLD. (2002). Food Safety Matters. Dept of Health, QLD</p> <p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 1. Getting started-what is nutrition p. 4-5</p>	<p>Set up files and handout assessment policy</p>

	<p>The supply of safe quality food as it is affected by traditional, modified or adapted production practices and environmental factors</p> <p>Food selection as it relates to the functional properties of food</p> <p>Properties determining performance requirements of food</p>	<ul style="list-style-type: none"> <li>○ flavour, texture and sound</li> <li>○ chemical properties staple foods macro and micro nutrients</li> <li>○ mise-en-place</li> <li>● Practical lesson <ul style="list-style-type: none"> <li>○ kitchen hygiene. Video ‘Safety in Food Handling’ work sheet activity</li> <li>○ complete worksheet on environmental and personal hygiene</li> <li>○ handout: Food Handling p. 14-19 and discuss food poisoning and danger zone</li> </ul> </li> <li>● Experiment: <ul style="list-style-type: none"> <li>○ complete Sensory Evaluation information sheet and “is Seeing Believing’ activity</li> <li>○ link to safe food handling practices (use senses to evaluate food safety and food presentation techniques “eat with our eyes”</li> </ul> </li> </ul>	<p>Williams, H. (2008) Sensory evaluation. Curtin University of Technology, Institute of Food Technologists.</p> <p>Nuffield Design &amp; Technology. (1996). Longman:UK.</p>	
<p><b>2</b></p>	<p>Quality and safe food requirements e.g. appropriate clothing and footwear, safe food handling procedures, personal behaviour personal hygiene relevant to health conditions and illnesses</p> <p>Food preparation and presentation skills e.g. introduction to cutting techniques</p> <p>Food handling practices and processing techniques that are</p>	<ul style="list-style-type: none"> <li>● Safe food handling practices and OSH continued Occupational Health and Safety</li> <li>● The Food ACT 1985-worksheet and reading (TAFE book p. 13-18).</li> <li>● Discuss equipment used in the kitchen areas. (Read: TAFE book p.21-41, 46-50 and complete questions p.33-35, 46-49)</li> <li>● Introduction to knife handling (identification, care and honing) <ul style="list-style-type: none"> <li>○ discussion on precision and rough cutting knife skills. (TAFE Book – 59 to 72 )</li> <li>○ discussion on food presentation</li> <li>○ garnish techniques and equipment: melon baller, zester (TAFE book p.21-50).</li> </ul> </li> <li>● Practical lesson <ul style="list-style-type: none"> <li>○ melon and citrus fruit salad</li> </ul> </li> </ul>	<p>Regency Institute TAFE, (2003). <i>Commercial cookery, Organise and Prepare Food</i>, SA: Regency Publishing.</p> <p>Western Australia Department of Consumer and Employment Protection Website, WORKSAFE  <a href="http://www.docep.wa.gov.au/WorkSafe/">http://www.docep.wa.gov.au/WorkSafe/</a></p> <p>Handout: Food presentation guidelines for food service.</p> <p>Article: Food that Fool, West Australian May 14, 2008: Bugs</p>	

	<p>selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements.</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p>	<ul style="list-style-type: none"> <li>○ demonstration and practical, fruit salad using garnish techniques, knife handling and precision cutting.</li> <li>○ segmenting an orange, macedoine, van dyke, wedges, fan</li> <li>● Experiment <ul style="list-style-type: none"> <li>○ complete in class activity using glitterbug kit</li> <li>○ how clean are your hands?</li> <li>○ food Safety Matters-keeping hands and nails clean p.10-11</li> <li>○ types of food contamination p 4-7</li> </ul> </li> </ul>	<p>and Tummies</p> <p>The Department of Health QLD. (2002). <i>Food Safety Matters</i>. Dept of Health, QLD</p> <p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Australia, fruit p.42,51 Ch 7. Dietary Guidelines p.72, p.78-83 Ch 2. Life's essentials, Fibre, Vitamins and Minerals p.14-15, 18-29</p>	
<b>3</b>	<p>The function of nutrients in the body and the effect of under or over consumption</p> <p>The supply of safe quality food as it is affected by traditional, modified or adapted production practices and environmental factors</p> <p>The variety of a natural food and how it influences its potential use and performance</p> <p>Issues, trends and innovations that are driven by changes in food production systems, practices and</p>	<ul style="list-style-type: none"> <li>● Discussion: what your body needs- Macro nutrients and micro nutrients. (Saxelby, p. 20-38)</li> <li>● <b>Introduce Task 1</b> <ul style="list-style-type: none"> <li>○ handout assessment task 1, explain</li> <li>○ discuss functional and chemical properties of food</li> </ul> </li> <li>● CSI Commodity 1. Fruit</li> <li>● Display of locally available and exotic fruit varieties. <ul style="list-style-type: none"> <li>○ discuss: fruit varieties and the influences on potential use and performance eg: dried, canned, fresh.</li> <li>○ nutritive value-micro and macro nutrients, antioxidants, storage, purchase, preparation and suitable methods of cookery-stewing, baking, poaching, availability</li> <li>○ innovations 'enchanted apples', go for 2and 5,</li> </ul> </li> </ul>	<p>Saxelby, C. (2006). <i>Nutrition for Life</i>. Victoria: Hardie Grant Books.</p> <p>Various fruits</p> <p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Australia, fruit p.42,51 Ch 7. Dietary Guidelines p.72, p.78-83</p>	<p>Introduce Task 1: Part A and B Commodity and skills investigation Tutorial and practical 1</p> <p><a href="http://wpc.westonewa.gov.au/Package.asp">http://wpc.westonewa.gov.au/Pack</a> <a href="http://wpc.westonewa.gov.au/Package.asp">age.asp</a> <i>Food Science and Nutrition</i> 68-112</p>

	<p>market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and communities in areas such as health and environmental concerns</p> <p>Food selection as it relates to the functional properties of food</p> <p>Functional properties determining performance requirements of food</p> <ul style="list-style-type: none"> <li>▪ dextrinisation</li> <li>▪ oxidation</li> </ul> <p>Food preparation and presentation skills</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p>	<p>what is a serve?</p> <ul style="list-style-type: none"> <li>○ issues of over and under consumption</li> </ul> <ul style="list-style-type: none"> <li>• Properties of food, definitions <ul style="list-style-type: none"> <li>○ oxidation, dextrinisation</li> </ul> </li> <li>• Functional property changes <ul style="list-style-type: none"> <li>○ dextrinisation: breakdown of starch during baking, adding sweetness to products</li> <li>○ oxidation: prevention of enzymatic reaction by stewing fruit in sugar syrup</li> </ul> </li> <li>• Practical lesson <ul style="list-style-type: none"> <li>○ teacup apple crumble</li> <li>○ bench management and oven safety</li> <li>○ method of cookery: wet and dry</li> <li>○ stewing and baking, effect on nutrient retention</li> <li>○ changes in physical properties</li> </ul> </li> <li>• Task 1: Complete Tutorial 1 (experiment) Fruit <ul style="list-style-type: none"> <li>○ colour and cell structure change, oxidation</li> </ul> </li> </ul>	<p>Ch 2. Life's essentials, Fibre, Vitamins and Minerals p.14-15, 18-29</p> <p>Recipe: Teacup crumble</p> <p>Quin, D. (2002). Experiment: FRUIT modified from Edith Cowan University.</p> <p>Department of Health-Government of WA, (2006). Food Frequency. <a href="http://www.health.wa.gov.au/publications/subject_index/index.cfm">http://www.health.wa.gov.au/publications/subject_index/index.cfm</a></p>	
4	<p>The function of nutrients in the body and the effect of under or over consumption</p>	<ul style="list-style-type: none"> <li>• CSI Commodity 2. Eggs <ul style="list-style-type: none"> <li>○ discuss structure</li> <li>○ nutritive value, fats</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT</p>	<p>Introduce Task 1: Part A and B</p>

<p>The supply of safe quality food as it is affected by traditional, modified or adapted production practices and environmental factors</p> <p>The variety of a natural food and how it influences its potential use and performance</p> <p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and communities in areas such as health and environmental concerns</p> <p>Food selection as it relates to the functional properties of food</p> <p>Functional properties determining performance requirements of food</p> <ul style="list-style-type: none"> <li>▪ dextrinisation</li> <li>▪ emulsification</li> <li>▪ coagulation</li> </ul> <p>Food preparation and</p>	<ul style="list-style-type: none"> <li>○ storage</li> <li>○ purchase</li> <li>○ preparation and suitable methods of cookery-boiling, poaching, frying</li> <li>○ availability</li> <li>○ innovations e.g. free range vs caged eggs, silicon moulds for poaching uses and function of eggs in cooking, baking-meringue</li> </ul> <ul style="list-style-type: none"> <li>• Properties of food definitions: emulsification and coagulation</li> <li>• Functional and physical property changes <ul style="list-style-type: none"> <li>○ coagulation, acid to assist emulsification</li> <li>○ revise dextrinisation, crouton</li> </ul> </li> <li>• Eggs as coagulating agents <ul style="list-style-type: none"> <li>○ in groups of four prepare:</li> <li>○ custard mixtures and conduct sensory evaluation of colour, flavour, texture, syneresis</li> <li>○ cooking time</li> <li>○ demonstrate: poaching egg and testing for</li> </ul> </li> </ul>	<p>Australia: HEIA. Ch 5. Foods in Aust/Eggs p.47 Ch 7. Dietary Guidelines p.86-87 Ch 2. Life's essentials/protein p. 16-17</p> <p>Recipe: Caesar salad with sourdough croutons and poached egg</p> <p>Alexander, S. (2004). <i>The Cook's Companion</i>. VIC: The Penguin Group. p.426 &amp; p. 415-421.</p> <p>Quin, D. (2002). Experiment: EGGS modified from Edith Cowan University.</p>	<p>Commodity and Skills investigation Tutorial and practical 2</p> <p><b>DUE; Task 1 Part A and B Commodity and Skills investigation Tutorial and practical 1</b></p>
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	<p>presentation skills</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p>	<p>freshness</p> <ul style="list-style-type: none"> <li>○ discuss whisking egg whites to form peaks, teacher demonstration</li> </ul> <ul style="list-style-type: none"> <li>● Practical lesson <ul style="list-style-type: none"> <li>○ Caesar Salad with sourdough croutons and poached egg</li> <li>○ demonstration of dressing: Caesar (emulsion)</li> <li>○ methods of cookery: wet and dry: poaching, panfrying</li> <li>○ discuss preparation, storage and serving of salads to maintain quality</li> </ul> </li> <li>● Task 1: Complete Tutorial 2. (experiment)</li> </ul>		
5	<p>The function of nutrients in the body and the effect of under or over consumption.</p> <p>The supply of safe quality food as it is affected by traditional, modified or adapted production practices and environmental factors</p> <p>The variety of a natural food and how it influences its potential use and performance Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and</p>	<ul style="list-style-type: none"> <li>● CSI Commodity 3. Vegetables and Overview Fats <ul style="list-style-type: none"> <li>○ discuss structure</li> <li>○ nutritive value, antioxidant</li> <li>○ storage, purchase, preparation</li> <li>○ serving and suitable methods of cookery- blanching, boiling, steaming, roasting, stir frying</li> <li>○ availability</li> <li>○ innovations and myth</li> <li>○ fresh vs frozen</li> <li>○ microwave cooking destroys the nutrients</li> <li>○ mushrooms are good for B12 if you are a vegetarian</li> <li>○ issues of over-under consumption</li> </ul> </li> </ul>	<p>Recommended reading:</p> <p>Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Aust/Vegetables p.58-59 Ch 7. Dietary Guidelines p. 72-77, 79 Ch 2. Life's essentials/ nutrient losses p.28-28, revisit p.18-29</p> <p>Saxelby, C. (2006). <i>Nutrition for Life</i>. Victoria: Hardie Grant Books. p. 76-77</p> <p>Alexander, S. (2004). <i>The Cook's Companion</i>. VIC: The Penguin Group. p.39</p>	<p>Introduce Task 1: Part A and B Commodity and skills investigation Tutorial and practical 3</p> <p><b>Due; Task 1 Part A and B Commodity and Skills investigation Tutorial and practical 2</b></p>

	<p>innovations on individuals and communities in areas such as health and environmental concerns</p> <p>Food selection as it relates to the functional properties of food</p> <p>Functional properties determining performance requirements of food</p> <ul style="list-style-type: none"> <li>▪ emulsification</li> <li>▪ coagulation</li> </ul> <p>Food preparation and presentation skills</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p>	<ul style="list-style-type: none"> <li>• Properties of food- definitions <ul style="list-style-type: none"> <li>○ emulsification-application of heat</li> <li>○ coagulation</li> </ul> </li>   <li>• Practical lesson <ul style="list-style-type: none"> <li>○ steamed vegetables with hollandaise sauce</li> <li>○ discuss: revise functional properties of eggs for sauces</li> <li>○ method of cookery: steaming</li> <li>○ functional property change: emulsification</li> </ul> </li>   <li>• Task 1: Complete Tutorial 3. (experiment) <ul style="list-style-type: none"> <li>○ vitamin loss when cooking</li> <li>○ addition of Bi- carbonate soda</li> </ul> </li> </ul>	<p>Quin, D. (2002). Experiment: Vitamin modified from Edith Cowan University.</p>	
6	<p>The function of nutrients in the body and the effect of under or over consumption.</p> <p>The supply of safe quality food as it is affected by traditional,</p>	<ul style="list-style-type: none"> <li>• CSI Commodity 4. Introduction to Meat/Protein/ Fat <ul style="list-style-type: none"> <li>○ Discuss structure</li> <li>○ nutritive value</li> <li>○ storage</li> <li>○ purchase</li> <li>○ preparation and suitable methods of cookery</li> <li>○ availability</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Aust/Meat &amp; poultry p.52-53</p>	<p>Introduce Task 1: Part A and B Commodity and skills investigation Tutorial and</p>

<p>modified or adapted production practices and environmental factors</p> <p>The variety of a natural food and how it influences its potential use and performance</p> <p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and communities in areas such as health and environmental concerns.</p> <p>Food selection as it relates to the functional properties of food</p> <p>Functional properties determining performance requirements of food</p> <ul style="list-style-type: none"> <li>▪ denaturation</li> <li>▪ caramelisation</li> </ul> <p>Food preparation and presentation skills</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p>	<ul style="list-style-type: none"> <li>○ innovation and trends in consuming meat</li> <li>○ vegetarianism ethical and moral dilemma</li> <li>○ issues of over-under consumption</li> <li>○ discuss factors to consider when selecting meat for a particular purpose-various cuts</li> </ul> <ul style="list-style-type: none"> <li>• Discuss properties of food, definitions <ul style="list-style-type: none"> <li>○ denaturation, application of heat</li> <li>○ coagulation</li> <li>○ introduction to caramelisation</li> <li>○ change in colour, myoglobin</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>• Practical lesson</li> </ul>	<p>Ch 7. Dietary Guidelines p.79, 86-87, 90-91</p> <p>Ch 2. Life's essentials/protein revisit p. 16-17, Fats p.10-13</p>	<p>practical 4</p> <p><b>Due; Task 1 Part A and B Commodity and Skills investigation Tutorial and practical 3</b></p>
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	<p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p>	<ul style="list-style-type: none"> <li>○ lemon marinated grilled kebabs with roasted vegetables</li> <li>○ discussion: revise nutritive value of vegetables and preparation to maintain quality.</li> <li>○ method of cookery: DRY: Grilling, roasting, panfry:</li> <li>○ functional property changes: denaturation, caramelisation</li> </ul> <ul style="list-style-type: none"> <li>● Task 1: Complete Tutorial 4. (experiment) <ul style="list-style-type: none"> <li>○ effect of heat on meat proteins and pigments, tenderisation</li> </ul> </li> </ul>		
7	<p>The function of nutrients in the body and the effect of under or over consumption.</p> <p>The supply of safe quality food as it is affected by traditional, modified or adapted production practices and environmental factors</p> <p>The variety of a natural food and how it influences its potential use and performance</p> <p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and</p>	<ul style="list-style-type: none"> <li>● CSI Commodity 5. Carbohydrate/sugars <ul style="list-style-type: none"> <li>○ where carbohydrates are found: (Saxelby. P.21)</li> <li>○ discuss: Food source, nutritive value, purchase, preparation and suitable methods of cookery, availability, innovations, issues of over and under consumption, sugar quiz (Saxelby, p. 60-63).</li> <li>○ function in food preparation (Compton, L &amp; Warren, C. p. 269-274 and 130-135)</li> </ul> </li> </ul>	<p>Recommended reading:</p> <p>Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA.</p> <p>Ch 2. Life's essentials/carbohydrate p. 8-9</p> <p>Ch 7. Dietary Guidelines Cereals and sugars p.72,73, 76-77, 94-95</p> <p>Ch 11. Nutrition related diseases p.131, 132</p> <p>Saxelby, C. (2006). <i>Nutrition for Life</i>. Victoria: Hardie Grant Books.</p> <p>Recipe:</p> <p>Compton, L &amp; Warren, C. (2008). <i>E-Food &amp; Technology</i>. VIC: Oxford University Press.</p>	<p>Introduce Task 1: Part A and B Commodity and skills investigation Tutorial and Practical 5</p> <p><b>Due; Task 1 Part A and B Commodity and Skills investigation Tutorial and practical 4</b></p>

	<p>communities in areas such as health and environmental concerns</p> <p>Food selection as it relates to the functional properties of food</p> <p>Functional properties determining performance requirements of food</p> <ul style="list-style-type: none"> <li>▪ caramelisation</li> <li>▪ crystallization</li> <li>▪</li> </ul> <p>Food preparation and presentation skills</p> <p>Mise-en-place (everything in its place)</p> <p>Food industry specific terminology</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p>	<ul style="list-style-type: none"> <li>• Properties of food- definitions: <ul style="list-style-type: none"> <li>○ caramelisation</li> <li>○ crystallisation</li> </ul> </li> <li>• Task 1: Complete Tutorial 5. (experiment) <ul style="list-style-type: none"> <li>○ sweeteners/sugars-energy drinks</li> <li>○ nutritive value/uses</li> <li>○ sugar: link to use in food preservation.</li> </ul> </li> <li>○ what happens when you heat a sugar solution?</li> <li>○ demonstrate: how to make rock candy</li> </ul> <ul style="list-style-type: none"> <li>• Practical lesson <ul style="list-style-type: none"> <li>○ jam –filling for sponge (use of fruit in season)</li> <li>○ toffee chards-décor for sponge</li> </ul> </li> </ul>		
8	<p>Functional properties determining performance requirements of food i.e.</p> <ul style="list-style-type: none"> <li>▪ dextrinisation—breakdown of starch during baking, adding sweetness to products</li> <li>▪ caramelisation—sugar in food is browned during</li> </ul>	<ul style="list-style-type: none"> <li>• CSI Commodity 6. <ul style="list-style-type: none"> <li>○ Carbohydrate, starches</li> <li>○ introduction to cereals and dietary fibre</li> <li>○ introduction structure, cereal grain</li> <li>○ food source</li> <li>○ nutritive value</li> <li>○ purchase</li> <li>○ preparation and suitable methods of cookery</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Aust/cereals p.44-46 Ch 7. Dietary Guidelines p.84</p>	<p>Introduce Commodity and skills investigation Tutorial and practical 6</p>

	<p>cooking</p> <ul style="list-style-type: none"> <li>▪ crystallisation—heating sugar to a syrup and then cooling</li> <li>▪ emulsification—eggs used to stabilise oil and vinegar</li> <li>▪ gelatinisation—thickening property of starch</li> <li>▪ oxidation—chemical changes in food when exposed to oxygen</li> <li>▪ denaturation—irreversible change in protein structure</li> <li>▪ coagulation—clotting of protein</li> <li>▪ leavening—the incorporation of air into products using mechanical or chemical methods</li> <li>▪ aeration—incorporating air into a product using a variety of techniques</li> <li>▪ rancidity—the spoilage of fats and oils as a result of exposure to oxygen</li> </ul> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p> <p>Food preparation and presentation skills</p> <p>Mise-en-place (everything in its</p>	<ul style="list-style-type: none"> <li>○ availability</li> <li>○ innovation</li> <li>○ issues</li> <li>○ over and under consumption</li> <li>○ function in food preparation</li> </ul> <ul style="list-style-type: none"> <li>• The Glycaemic Index and Dietary Fibre</li> <li>• Properties of food- definitions <ul style="list-style-type: none"> <li>○ leavening</li> <li>○ gelatinisation</li> <li>○ aeration</li> </ul> </li> <li>• Task 1: Complete Tutorial 6. (experiment) <ul style="list-style-type: none"> <li>○ view video - <i>The Chemistry of Cooking - what happens inside a sponge cake?</i> and complete Tutorial 6 work sheet</li> </ul> </li> <li>• Revision of all functional properties- physical and chemical changes which occur when preparing and cooking food</li> <li>• Practical lesson <ul style="list-style-type: none"> <li>○ sponge cake filled with cream &amp; jam and toffee chards from previous lesson</li> <li>○ decorated with almond flakes (discuss rancidity of nuts)</li> <li>○ guest judge for the best gateau</li> </ul> </li> </ul>	<p>&amp; 85</p> <p>Ch 11. Nutrition related diseases p.1116, 142-148</p> <p>Ch 14 Facts and Fallacies p.176-177</p> <p>Saxelby, C. (2006). <i>Nutrition for Life</i>. Victoria: Hardie Grant Books. P. 79-81 &amp; 21-23.</p> <p>Rees, R (2000). <i>Chemistry of Cooking</i>. Victoria: Classroom Video, Education with Vision. 20 minutes.</p> <p>Recipe</p>	<p><b>Due; Task 1</b></p> <p><b>Part A and B</b></p> <p><b>Commodity and Skills</b></p> <p><b>investigation</b></p> <p><b>Tutorial and practical 5</b></p>
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	place)  Food industry specific terminology			
9	<p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and communities in areas such as health and environmental concerns.</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements.</p>	<ul style="list-style-type: none"> <li>• Task 1 complete</li> <li>• <b>Introduce Task 2</b> Celebration Lunch for 20 guests</li> <li>• Intro to food habits and trends, ethical considerations <ul style="list-style-type: none"> <li>○ identify how, why, what and where food is shared in society</li> </ul> </li> <li>• Spices identify a culture/shape a cuisine/ an important commodity. 'The magical transformative properties of spice' Lawson, J. (2002). p. 8</li> <li>• Practical lesson <ul style="list-style-type: none"> <li>○ value adding with Spices: 4 recipes to be made and shared</li> <li>○ 1. Sweet potato, pumpkin, coriander and coconut soup</li> <li>○ 2. Balti lamb curry with rice,</li> <li>○ 3. Honey and cardamom biscuits,</li> <li>○ 4. Poached chicken with salsa verde</li> </ul> </li> </ul>	<p>Recommended reading:</p> <p>Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 5. Foods in Australia, cereals p.44-46 Ch 7. Dietary Guidelines p.84 - 85 Ch 11. Nutrition related diseases p.1116, 142-148 Ch 14 Facts and Fallacies p.176-177</p> <p>Lawson, J. (2008). <i>Spice Market</i>. NSW: Murdoch Books Pty Ltd.</p>	<p><b>Due; Task 1 Part A and B</b> <b>Commodity and Skills investigation</b> <b>Tutorial and practical 6</b></p>
10	<p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and</p>	<ul style="list-style-type: none"> <li>• Task 2 Part A <ul style="list-style-type: none"> <li>○ discuss: factors affecting food choices including increased use and availability of processed and convenience foods</li> <li>○ effect on health</li> <li>○ what is a normal eating/serve size</li> <li>○ the diet cycle</li> </ul> </li> <li>• Factors to consider when menu planning including <ul style="list-style-type: none"> <li>○ types of menus</li> </ul> </li> </ul>	<p>Recommended reading:</p> <p>Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 12. Factors influencing food choices p.150-163 Ch 8. Tools for food selection p.102-109</p>	

	<p>communities in areas such as health and environmental concerns</p> <p>Quality and safe food requirements e.g. appropriate clothing and footwear, safe food handling procedures, personal behaviour personal hygiene relevant to health conditions and illnesses</p> <p>The influence of consumer beliefs and values on enterprise decisions about resource management</p> <p>Dietary planning using the nutritional value of food to achieve specific dietary requirements when entertaining e.g. food choice software, food diaries, food labels</p> <p>Monitoring of design challenges when producing food products, services or systems to meet the changing needs, wants, beliefs and values of producers and communities using the technology process</p> <p>Mise-en-place (everything in its place)</p>	<ul style="list-style-type: none"> <li>○ functional healthy meals and ingredients, dietary considerations, AGHE, facilities and resources to prepare food menu</li> <li>○ skills available</li> <li>○ aesthetics e.g. colour, texture</li> <li>○ size of portion,</li> <li>○ social: serving style of meal e. g, buffet, a la carte, set menu</li> <li>○ people eating together</li> <li>○ cultural preferences, traditions</li> <li>○ use of staple foods</li> <li>○ values</li> <li>○ needs and wants</li> <li>○ environmental e.g. recycling packaging, wastage, food scraps</li> </ul> <ul style="list-style-type: none"> <li>● Practical lesson <ul style="list-style-type: none"> <li>○ discussion: workflow planning (TAFE book, p.89-96)</li> <li>○ demonstrate how to use Food Choices to analyse a recipe.</li> </ul> </li> <li>● Task 2 <ul style="list-style-type: none"> <li>○ develop plans and select recipes suitable for trials for celebration lunch-considering above factors</li> <li>○ theme for celebration</li> <li>○ prepare food orders for trials - due</li> <li>○ food presentation ideas</li> </ul> </li> </ul>	<p>Regency Institute TAFE, (2003). <i>Commercial cookery, Organise and Prepare Food</i>, SA: Regency Publishing.</p> <p>Foodchoices (Xyris Software, 2008)</p>	<p><b>Task 2 food orders due</b></p>
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	<p>Structured teamwork skills suitable for industry standards</p> <p>Preparation of production plans and food orders</p> <p>Skills to manage large scale food systems or services, including functions or food demonstrations for a minimum 20 people selecting, planning, preparing and presenting of food to suit a purpose</p>			
11	<p>Food preparation and presentation skills e.g. introduction to cutting techniques</p> <p>Mise-en-place (everything in its place)</p> <p>Structured teamwork skills suitable for industry standards</p> <p>Preparation of production plans and food orders</p> <p>Food industry specific terminology</p> <p>Selecting, planning, preparing and presenting of food to suit a purpose</p> <p>Strategies to maximise the use of human and non-human resources</p>	<ul style="list-style-type: none"> <li>• Continue work on Task 2 part A</li> <li>• Practical lesson <ul style="list-style-type: none"> <li>○ trials for celebration lunch</li> </ul> </li> <li>• Adapting/modifying recipes <ul style="list-style-type: none"> <li>○ garnish techniques</li> </ul> </li> <li>• Discuss: what make a good team? <ul style="list-style-type: none"> <li>○ identify features of effect team work</li> <li>○ communication and problem solving techniques</li> <li>○ listening</li> <li>○ responding</li> <li>○ discuss ways to manage conflict</li> </ul> </li> </ul>	<p>Recommended reading</p> <p>Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA.  Ch 12. Factors influencing food choices p.150-163  Ch 8. Tools for food selection p.102-109</p>	

	Monitoring of design challenges when producing food products, services or systems to meet the changing needs, wants, beliefs and values of producers and communities using the technology process			
12	<p>Monitoring of design challenges when producing food products, services or systems to meet the changing needs, wants, beliefs and values of producers and communities using the technology process</p> <p>Structured teamwork skills suitable for industry standards</p> <p>Preparation of production plans and food orders</p> <p>Selecting, planning, preparing and presenting of food to suit a purpose</p> <p>Strategies to maximise the use of human and non-human resources</p>	<ul style="list-style-type: none"> <li>• Task 2 Part A Celebration Lunch: work on the task <ul style="list-style-type: none"> <li>○ menu card</li> <li>○ table settings</li> <li>○ ambience of function</li> <li>○ organisation</li> <li>○ team work</li> <li>○ planning</li> </ul> </li>   <li>• Practical lesson <ul style="list-style-type: none"> <li>○ work on task 2: Celebration Lunch</li> <li>○ how to cost recipes- food costing</li> <li>○ portion and quality control</li> <li>○ discuss importance for consumer and producer in food service industry</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 12. Factors influencing food choices p.150-163 Ch 8. Tools for food selection p.102-109</p>	
13	<p>Dietary planning using the nutritional value of food to achieve specific dietary requirements when entertaining e.g. food choice software, food diaries, food labels</p> <p>Monitoring of design challenges</p>	<ul style="list-style-type: none"> <li>• Task 2 Part A: continue work on the task <ul style="list-style-type: none"> <li>• nutrition analysis of chosen recipe for celebration buffet lunch</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 16. Sources of nutrition information p. 188-189</p>	<b>Task 2 Part A 1 Due</b>

	<p>when producing food products, services or systems to meet the changing needs, wants, beliefs and values of producers and communities using the technology process</p> <p>Structured teamwork skills suitable for industry standards</p> <p>Preparation of production plans and food orders</p> <p>Selecting, planning, preparing and presenting of food to suit a purpose</p> <p>Strategies to maximise the use of human and non-human resources</p>			
14	<p>Structured teamwork skills suitable for industry standards</p> <p>Preparation of production plans and food orders</p> <p>Skills to manage large scale food systems or services, including functions or food demonstrations for a minimum 20 people</p> <p>Food industry specific terminology</p> <p>Conflict resolution</p> <p>Selecting, planning, preparing</p>	<ul style="list-style-type: none"> <li>• <b>Introduce Task 2 Part B:</b> Present the celebration Lunch (buffet style for 20 guests) <ul style="list-style-type: none"> <li>○ use appropriate equipment</li> <li>○ OSH procedures</li> <li>○ quality control</li> <li>○ food safety measures applied when preparing, storing and serving food</li> </ul> </li> <li>• <b>Introduce Task 2 Part C:</b> In class written evaluation/response to planning and presenting celebration lunch <ul style="list-style-type: none"> <li>○ consider functional</li> <li>○ aesthetic</li> <li>○ social and environmental factors</li> </ul> </li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 11. Nutrition related diseases p.1116-149</p>	<b>Task 2 Part B and C Due</b>

	<p>and presenting of food to suit a purpose</p> <p>Strategies to maximise the use of human and non-human resources</p> <p>Food handling practices and processing techniques that are selected and used to control reactions between ingredients, equipment and related materials, and to achieve food safety and performance requirements</p> <p>Requirements e.g. appropriate clothing and footwear, safe food handling procedures, personal behaviour personal hygiene relevant to health conditions and illnesses</p> <p>The impact of consumer knowledge about products and services on consumer enterprise relationships</p> <p>The influence of consumer beliefs and values on enterprise decisions about resource management</p>			
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<p><b>15</b></p>	<p>The function of nutrients in the body and the effect of under or over consumption</p> <p>Issues, trends and innovations that are driven by changes in food production systems, practices and market dynamics e.g. eating out, drive-through food and drink outlets</p> <p>Impact of issues, trends and innovations on individuals and communities in areas such as health and environmental concerns</p>	<ul style="list-style-type: none"> <li>• Feedback on Task 2</li> <li>• Discuss: The Power of Food- Nutrition problems of today. (Saxelby, p. 5-18)</li> <li>• Data analysis <ul style="list-style-type: none"> <li>○ how to interpret information.</li> </ul> </li> <li>• Nutrient quiz</li> <li>• Revision for exam</li> <li>• Safe food handling practices, terminology, methods of cookery etc</li> <li>• Video: Functional Properties of Food 26minutes</li> <li>• Task 3: Exam</li> </ul>	<p>Recommended reading: Reynolds.J. (2008). <i>Nutrition the Inside Story</i>. ACT Australia: HEIA. Ch 11. Nutrition related diseases p.1116-149</p> <p>Saxelby, C. (2006). <i>Nutrition for Life</i>. Victoria: Hardie Grant Books.</p> <p>Media article: 'Ban on food additives to protect children' The West Australian Functional properties of food (2007) Victoria: Classroom Video, Education with Vision.</p>	<p><b>Task 3 Due</b></p>
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## Assessment outline - Food Science and Technology (Hospitality)

### Unit 2A: Food for entertainment

Unit learning context: Cultural dining

Assessment type	Type weighting	Task weighting	Assessment task	Week due	Content	Outcome 1 Understanding food materials	Outcome 2 Developing food opportunities	Outcome 3 Working in food environments	Outcome 4 Understanding food in society
Investigation	30% (CC weighting 30-40%)	30%	<b>Task 1: Part A</b> Commodities investigation	2- 9	Food as a commodity Issues, trends and innovation Properties of food	✓			✓
Production	40% (CC weighting 40-50%)	15%	<b>Task 1: Part B</b> Skills assessment	10	Skills with food Food practices and processing Laws and regulations	✓	✓	✓	
		10%	<b>Task 2: Part A</b> Devise plans for celebration buffet lunch	12	Technology process Nutrition Skills with food		✓	✓	✓
		15%	<b>Task 2: Part B:</b> Produce a celebration lunch function	14	Technology process Skills with food		✓	✓	
Response	30% (CC weighting 10-30%)	5%	<b>Task 2: Part C</b> In class written response to Celebration Lunch	14	Properties of food. Skills with food Consumer and enterprise relationships	✓			✓
		25%	<b>Task 3</b> Exam	15	Properties of food Nutrition Skills with food Food practices and processing Issues, trends and innovation	✓	✓		✓

## Assessment Task 1 Part A: Unit 2A FSTH:

### Task 1 Part A: Commodities Investigation

<b>Assessment type:</b>	Part A: Investigation, Part B: Production
<b>Outcomes:</b>	Outcome 1: Understanding food materials Outcome 3: Working with food
<b>Unit context:</b>	Cultural dining
<b>Task duration:</b>	7 weeks
<b>Task weighting:</b>	30% of unit total

#### Task 1 Part A: Commodities Investigation (60 marks - 30%)

The aim of Task 1 is to look a little closer at food as a commodity...what happens when food is cooked and why, what is in it and why we need it, who makes it and where is it from and how can we use a range of ingredients to prepare innovative food products.

Over the next few weeks, you will have the opportunity to find out the answers by conducting a series of food investigations (experiments). You will learn about the functional properties of food including the chemical and physical changes that occur when cooking and preparing food, the nutritive value of key ingredients and about some of the trends and issues related to food and society. You will also get the opportunity to produce a range of traditional and modern dishes to develop your knowledge and food handling and processing skills.

#### What you need to do:

Complete six tutorials and investigate key commodities, functional properties (physical and chemical), food myths, innovations and current issues.

#### 1. Food as a commodity

- Conduct the food experiment as per instruction and in a safe and organised manner
- Define and explain the functional and physical properties/changes related to food experiments
- Explain nutritional properties related to food experiments including the effect of under or over consumption of nutrients
- Use accurate and relevant terminology when writing up the experiment.

#### 2. Food in society

- Clearly identify food related issues, trends and/or innovations related to the weekly topic
- Examine the impact on individuals and communities
- Provide accurate and informed recommendations using reference materials. All work must be referenced
- Complete questions related to the experiment and submit all written work by the due date.

What is required for assessment?	Due dates
<input type="checkbox"/> Tutorial and practical - Fruit	Week 4
<input type="checkbox"/> Tutorial and practical - Eggs	Week 5
<input type="checkbox"/> Tutorial and practical - Vegetables	Week 6
<input type="checkbox"/> Tutorial and practical - Meat	Week 7
<input type="checkbox"/> Tutorial and practical – Carbohydrates / sugars	Week 8
<input type="checkbox"/> Tutorial and practical – Carbohydrates / starches	Week 9

Investigation	Marks allocated	Marks awarded tutorials						Total mark	Task weighting	Converted to percentage	
		1	2	3	4	5	6				
<b>1. Food as a commodity</b>											
<ul style="list-style-type: none"> <li>Defines and accurately explains functional and physical properties/changes, including nutritional properties related to food experiments and accurately uses relevant terminology.</li> </ul>	5										
<ul style="list-style-type: none"> <li>Defines and explains most of the functional and physical changes, including nutritional properties related to the food experiments with some relevant terminology used</li> </ul>	4										
<ul style="list-style-type: none"> <li>Satisfactorily defines and explains some of the functional and physical properties/changes, including nutritional properties with some relevant terminology used</li> </ul>	3										
<ul style="list-style-type: none"> <li>Simple definition and briefly explains functional and physical properties/changes with limited nutritional properties and use of relevant terminology</li> </ul>	2										
<ul style="list-style-type: none"> <li>Shows poor understanding of the functional and physical changes with basic information provided</li> </ul>	1										
<b>2. Food in society</b>											
<ul style="list-style-type: none"> <li>Clearly identifies relevant food related issues, trends and/or innovations and examines impact on individuals and communities, provides accurate information</li> </ul>	5										
<ul style="list-style-type: none"> <li>Clearly identifies some food related issues, trends and/or innovations and examines impact on individuals and communities, provides accurate information</li> </ul>	4										
<ul style="list-style-type: none"> <li>Satisfactorily identifies food related issues, trends and/or innovations and examines some impacts on individuals and communities</li> </ul>	3										
<ul style="list-style-type: none"> <li>Lists some food related issues, trends and/or innovations and states some impacts on individuals and communities</li> </ul>	2										
<ul style="list-style-type: none"> <li>Uses personal opinion to briefly list some of the issues/trends or innovations</li> </ul>	1										
<b>TASK TOTAL</b>		<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>/60</b>	<b>30%</b>	<b>%</b>
<b>Teacher comment:</b>											

## Assessment Task 1 Part B: Unit 2A FSTH:

### Task 1 Part B: Skills assessment

<b>Assessment type:</b>	Production
<b>Outcomes:</b>	Outcome 1: Understanding food materials Outcome 2: Developing food materials Outcome 3: Working with food
<b>Unit context:</b>	Cultural dining
<b>Task duration:</b>	8 weeks
<b>Task weighting:</b>	15% of unit total

### Task 1 Part B: Skills assessment (60 marks – 15%)

Demonstrate skills with food, food handling and processing techniques when using traditional, modified or adapted production practices to produce food products for entertaining. Submit written work with each tutorial presented for Task 1 Part A

#### What you need to do:

Demonstrate the following skills when producing food products for Task 1 Part A

- **Skills with food**
  - Independently and effectively manage work environment
  - Within time constraints, produce recipes demonstrating a very high level of food presentation and preparation skills.
- **Food Practices and processing techniques**
  - Independently and safely demonstrate appropriate food processing techniques.
- **Written Work**
  - Describe relevant food processing techniques used including, sensory evaluation, methods of cookery, safe food handling practices and explain modifications to improve outcome
  - Complete questions related to the experiment and submit all written work by the due date.

What is required for assessment?	Due dates
<input type="checkbox"/> Written work submitted with each tutorial	Weeks 2 - 9

NAME \_\_\_\_\_

Part B: Skills assessment	Marks allocated	Marks awarded tutorials						Total mark	Task weighting	Converted to percentage	
		1	2	3	4	5	6				
<b>1. Skills with food to industry standard</b>											
<ul style="list-style-type: none"> <li>Independently and effectively manages work environment to consistently produce recipes demonstrating a very high level of food presentation and preparation skills.</li> </ul>	5										
<ul style="list-style-type: none"> <li>Effectively manages work environment to produce recipes demonstrating a high level of food presentation and preparation skills</li> </ul>	4										
<ul style="list-style-type: none"> <li>Satisfactorily follows recipe and demonstrates an adequate level of food preparation and presentation skills</li> </ul>	3										
<ul style="list-style-type: none"> <li>Follows recipe and demonstrates basic skills to produce food</li> </ul>	2										
<ul style="list-style-type: none"> <li>Follows recipe and shows limited skills in applying food preparation and presentation techniques under direction</li> </ul>	1										
<b>2. Food practices and processing to industry standard</b>											
<ul style="list-style-type: none"> <li>Independently demonstrates and describes relevant food processing techniques used including, methods of cookery, safe food handling practices and explains modifications to improve outcome</li> </ul>	5										
<ul style="list-style-type: none"> <li>Independently demonstrates and describes some of the relevant food processing techniques used including, sensory evaluation, methods of cookery, safe food handling practices and explains modifications to improve outcome</li> </ul>	4										
<ul style="list-style-type: none"> <li>Satisfactorily demonstrates and describes some of the relevant food processing techniques used including, sensory evaluation, methods of cookery, safe food handling practices and suggests modifications to improve outcome</li> </ul>	3										
<ul style="list-style-type: none"> <li>Satisfactorily demonstrates and describes some of the relevant food processing techniques used including, sensory evaluation, methods of cookery, safe food handling practices and suggests modifications to improve outcome</li> </ul>	2										
<ul style="list-style-type: none"> <li>Shows and provides brief information of food processing techniques used</li> </ul>	1										
<b>TASK TOTAL</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>/60</b>	<b>15%</b>	<b>%</b>
<b>Teacher comment:</b>											

## Assessment Task 2 Part A: Unit 2A FSTH

### Task 2 Part A: Plan a Celebration Lunch

<b>Assessment type:</b>	Production
<b>Outcomes:</b>	Outcome 2: Developing food materials Outcome 3: Working with food Outcome 4: Understanding food in society
<b>Unit context:</b>	Cultural dining
<b>Task duration:</b>	3 weeks
<b>Task weighting:</b>	10% of unit total

#### Task 2 Part A: Plan a Celebration Lunch (10 marks - 10%)

Food meets our physiological needs and the way in which food is consumed is closely entwined with tradition, culture, social customs and our values and beliefs. Festivals, food rituals, feasting and special events are all occasions celebrated with food. Indeed, it is widely accepted that food plays an important role whenever people get together.

Devise plans for a themed celebration buffet lunch for guests and record the planning in a center file.

#### What you need to do

##### Part A: Planning

- In groups of four, identify food habits and trends including how, why, what and where food is shared in society. (brainstorm sheet)
- As a whole class, develop a theme to suit values, needs and wants of guests
- Identify factors that need to be considered when planning a menu. (Individual report ½ page)
- In groups of four research suitable recipes to prepare for trials. Each group is to trial one entrée, one main course, one dessert and one accompaniment
- As a whole class communicate and negotiate to decide the menu
- Each member in the group is to include the following in a centre file
  - produce a recipe and a food order
  - produce a production plan,
  - complete a food costing sheet
  - complete a nutritional analysis using FoodChoices
- In addition, to managing the front of house restaurant service and following negotiation, each group will be allocated specific tasks to be completed prior to the lunch and on the day of the lunch e.g. (invitations, menu cards, table presentation and settings, guest list, resource list.

What is required for assessment?	Due date
<input type="checkbox"/> Centre file (plans, recipes, food orders, food costing, workflows, nutritional analysis)	Week 12

## Marking key Task 2 Part A: Unit 2A FSTH

Plan a Celebration Lunch	Maximum possible mark	Marks awarded	Task weighting	Weighted mark
<b>Food in society: Planning production, target audience's needs</b>				
Independently and consistently identifies relevant social aspects of food trends/habits/innovations and develops plans for a lunch function which reflects audience's needs and values, all factors (including nutritional analysis, functional, social, environmental and economic) were considered in menu planning	5			
Identifies social aspects of food trends/habits/innovations and develops plans for a lunch function which reflects audience's needs and values, all factors (including nutritional analysis, functional, social, environmental and economic) were considered in menu planning	4			
Identifies some social aspects of food trends/habits and plans for a lunch function reflect audience's needs and values, most factors (including nutritional analysis, functional, social, environmental and economic) were considered in menu planning	3			
Briefly identifies some social aspects of food trends/habits and plans for a lunch function, some audience's needs and values, some factors (including nutritional analysis, functional, social, environmental and economic) were considered in menu planning	2			
Limited social aspects of food habits were listed and plans with assistance for a lunch function reflect audience's needs and values, few factors (including nutritional analysis, functional, social, environmental and economic) were considered in menu planning	1			
<b>Recipe research and development- food trials</b>				
Accurately selects, devises and prepares recipes and makes appropriate modifications accordingly, independently writes recipe, food orders, costing sheets and follows and modifies integrated, sequential production plans that clearly identify all team and individual roles and includes realistic time allocations	5			
Selects, adapts and prepares recipes and makes some modifications, writes recipe, food orders, costing sheets and follows and modifies production plans that identify all team and individual roles and includes time allocations	4			
Selects, prepares recipes with guidance and suggests some modifications, writes recipe, food orders, costing sheets and follows and modifies production plans under direction	3			
Selects and follows recipes with guidance, writes recipe, food orders, costing sheets and produces and follows production plans under direction	2			
Prepares and follows recipes with guidance, writes recipe, attempts to write a food order, costing sheet and produce a production plan under direction	1			
<b>TASK TOTAL</b>	<b>10</b>	<b>/10</b>	<b>10%</b>	<b>%</b>
<b>Teacher comment:</b>				

## Assessment Task 2 Part B: Unit 2A FSTH

### Task 2 Part B: Produce a Celebration Lunch

<b>Assessment type:</b>	Production
<b>Outcomes:</b>	Outcome 2: Developing food materials Outcome 3: Working with food
<b>Unit context:</b>	Cultural dining
<b>Task duration:</b>	1 week
<b>Task weighting:</b>	15% of unit total

### Task 2 Part B: Produce a Celebration Lunch (15 marks - 15%)

Implement the planning undertaken for Task 2 Part A and produce and serve a buffet Celebration Lunch to invited guests. Demonstrate skills with food.

#### What you need to do:

- As a whole class, work in small groups and develop a production system to produce and serve the chosen menu to invited guests
- Apply safe food handling practices and processes ensuring a very high standard of hygiene is managed (bench management, food hygiene and safe food storage)
- Manage production within time constraints, mise-en-place is organised
- Use appropriate equipment and techniques for handling food
- Demonstrate skills to manage large scale food productions including the use of food presentation and garnish techniques
- Manage portion control and minimise food wastage.

What is required for assessment?	Due date
<input type="checkbox"/> Attendance on the day of production (absence to be explained in accordance with the school assessment policy)	Week 14

## Marking key Task 2 Part B: Unit 2A FSTH

<b>Produce a Celebration Lunch</b>	<b>Maximum possible mark</b>	<b>Marks awarded</b>	<b>Task weighting</b>	<b>Weighted mark</b>
<b>Food processing skills and handling to Industry Standard (front and Back of house)</b>				
Independently and effectively manages work environment to consistently produce recipes demonstrating a very high level of food presentation and preparation skills	5			
Effectively manages work environment to produce recipes demonstrating a high level of food presentation and preparation skills	4			
Satisfactorily follows recipe and demonstrates an adequate level of food preparation and presentation skills	3			
Follows recipe and demonstrates basic skills to produce food	2			
Follows recipe and shows limited skills in applying food preparation and presentation techniques under direction	1			
<b>Safe and hygienic work practices to industry standard</b>				
Independently and consistently demonstrates a very high level of skill in the application of safe food handling practices and processing techniques	5			
Independently demonstrates a high level of skill in the application of safe food handling practices and processing techniques	4			
Satisfactorily demonstrates an adequate level of skill in the application of safe food handling practices and processing techniques	3			
Demonstrates few skills in the application of safe food handling practices and processing techniques	2			
Demonstrates limited skills in the application of safe food handling practices and processing techniques	1			
<b>Teamwork and communication skills for front and back of house</b>				
Actively contributes and consistently works as a team during all stages of the food function to effectively manage opportunities and resources (menu cards, invitations, name cards, table settings etc) to meet performance requirements	5			
Contributes and works as a team with others during all stages of the food function to manage opportunities and resources to meet performance requirements	4			
Inconsistently contributes and works as a team with others during all stages of the food function to manage opportunities and resources to meet performance requirements	3			
Limited contribution is made and sometimes works with others during some stages of the food function to manage opportunities and resources to meet performance requirements	2			
Ineffective contribution is made and follows others during some stages of the food function to manage opportunities and resources to meet performance requirements	1			
<b>TASK TOTAL</b>	<b>15</b>	<b>/15</b>	<b>15%</b>	<b>%</b>
<b>Teacher comment:</b>				

## Assessment Task 2 Part C: Unit 2A FSTH

### Task 2 Part C: Evaluate the Celebration Lunch

<b>Assessment type:</b>	Response
<b>Outcomes:</b>	Outcome 1: Understanding food materials Outcome 4: Understanding food in society
<b>Unit context:</b>	Cultural dining
<b>Task duration:</b>	1 week
<b>Task weighting:</b>	5% of unit total

### Task 2 Part C: Evaluate the Celebration Lunch (10 marks - 5%)

Produce a written evaluation of the effectiveness of production processes, communication, quality requirements and personal contribution during the production of the celebration lunch in Task 2 Part B.

#### What you need to do:

##### Evaluation

- Briefly outline your lunch task and list the human and non-human resources used
- Describe the target market for which the meal was planned and the needs and values of the target market. Make reference to your nutritional analysis information
- Explain your specific role in your group, your involvement and contribution throughout the task.
- Use specific examples from the luncheon to explain how you used effective management and communication skills to:
  - organise production processes
  - manage issues that arose while working with others- including conflict resolution
  - ensure quality requirements (food and service) were met
- Explain the functional, economic, social and environmental factors that have influenced your food function decisions
- Suggest three improvements you would make to this task.

##### Writing

- Include an introduction to the task clearly defining the response issue
- Use relevant terminology accurately
- Correctly use sentencing and paragraphing to structure the response
- Include an effective and logical conclusion
- Accurately use an approved format to record all references.

What is required for assessment?	Due date
<input type="checkbox"/> Written evaluation	Week 14

## Marking key Task 2 Part C: Unit 2A FSTH

<b>Evaluate a Celebration Lunch</b>	<b>Maximum possible mark</b>	<b>Marks awarded</b>	<b>Task weighting</b>	<b>Weighted mark</b>
Clearly and accurately explains how human and non-human resources were managed and critically evaluates teamwork and communication skills, functional, economic, social and environmental factors which influenced the planning and implementation of the food function	5			
Explains how human and non-human resources were managed and evaluates teamwork and communication skills, functional, economic, social and environmental factors which influenced the planning and implementation of the food function	4			
Explains how some human and non-human resources were managed and comments on teamwork and communication skills, functional, economic, social and environmental factors which influenced the planning and implementation of the food function	3			
Lists how some human and non-human resources were managed and briefly comments on teamwork and communication skills, functional, economic, social and environmental factors which influenced the food function	2			
Briefly lists how some human and non-human resources were managed and makes limited comments on aspects of the food function	1			
<b>Writing skills</b>				
Includes an introduction to the topic clearly defining the response issue	1			
Accurately uses relevant terminology	1			
Correctly uses sentencing and paragraphing to structure the response	1			
Includes an effective and logical conclusion	1			
Accurately uses an approved format to reference all information sources	1			
<b>TASK TOTAL</b>	<b>10</b>		<b>5%</b>	<b>%</b>
<b>Teacher comment:</b>				

## Assessment Task 3: Unit 2A FSTH

### Assessment Task 3: Exam

**Assessment type:** Response

**Outcomes:** Outcome 1: Understanding food materials  
Outcome 2: Developing food materials  
Outcome 3: Working with food  
Outcome 4: Understanding food in society

**Unit context:** Cultural dining

**Task duration:** 2 hours

**Task weighting:** 25% of unit total

### What you need to do:

Students will be given a sample Curriculum Council exam paper to identify and discuss the general structure of the exam paper

- Develop a personal time plan for revision. Effective exam strategies will be discussed in class.
- Revise the following areas of content for the Food Science and Technology STAGE 2A exam. Also refer to the Unit Outline and the Curriculum Council Syllabus document
  - Safe food handling, including storage, preparation and serving, personal and environmental hygiene, cross contamination, danger zone, food contamination and poisoning, The Food ACT
  - Terminology and definitions, food processing, commodity groupings, physical properties e.g. texture, shape, size and colour, sensory properties e.g. sight, smell, taste, touch and sound, chemical properties, staple foods, macro and micro nutrients and mise-en-place.
  - Sensory evaluation information
  - Food preparation and presentation techniques, including appropriate use of equipment and knife handling, precision and rough cutting knife skills and ways to improve the quality of food when serving
  - Food practices and processing techniques including dry and wet methods of cookery, correct cookery method to suit various commodities to preserve nutritional qualities of food
  - Food as a commodity including fruit, eggs, vegetables, meat, poultry, cereals, carbohydrates, sugar and starches, fats, dietary fibre and antioxidants
  - Type and functions of main nutrients related to commodities, nutritive value, purchase, preparation, suitable methods of cookery, innovations and trends in society (refer to Task 1 tutorial questions), issues with over and under consumption, consumption trends and impact on health and environment
  - Properties of food, definitions, physical and chemical changes, what happens when food is cooked, processed and stored? Colour and pigments, function of various reactions e.g. thickening of sauce, browning when sugar is heated, stabilising properties of egg in an emulsion. Must have knowledge of the following properties: dextrinisation, caramelisation, crystallisation, emulsification, gelatinisation, oxidation, denaturation, coagulation, leavening, aeration and rancidity
  - Target markets when preparing, planning and catering for various food functions.
  - Factors to consider or decisions you had to make when planning a function e.g., menu planning, types of menus, functional considerations, healthy meals and ingredients, dietary considerations, AGHE, facilities and resources to prepare food menu, skills available, aesthetic considerations such as colour and texture, size of portion, social considerations such as serving style of meal e.g. buffet, a la carte, set menu, people eating together, cultural preferences, traditions and use of staple foods. Values, needs and wants. Environmental considerations e.g. recycling packaging, wastage and food scraps

- Factors affecting food choices including increased use and availability of processed and convenience foods, effect on health, normal eating and serve sizes, the diet cycle, time, values, money available, availability, media, change in family structure and workforce
- Importance of correct portion and quality control when preparing food for service considering both the consumer and producer
- Communication techniques, organisational skills, bench management and conflict resolution skills you implemented to ensure a successful food function.

The in school exam will be held at the completion of the unit

The time allowed includes ten minutes of reading time before commencing the exam. Working time for the exam is two hours.

The table below indicates the possible marks for each section with the overall exam mark converted to 25% of the unit total.

Section	Suggested working time	Number of questions available	Number of questions to be attempted	% of paper	Total possible marks
One: Multiple-choice	20 minutes	20	20	20%	20
Two: Short response	50 minutes	5	5	50%	50
Three: Extended answer	25 minutes	1	1	15%	15
Four: Context specific extended answer	25 minutes	2	1	15%	15
				Total marks	100

Adapted: Reference: Curriculum Council (2008). *FOOD SCIENCE AND TECHNOLOGY DRAFT SAMPLE EXAMINATION STAGE 2*

**Recommended reading for STAGE 2A Food Science & Technology:** Reynolds. J. (2008). *Nutrition the Inside Story*. ACT Australia: HEIA.

**Student log sheet**

Week	Recommended reading: Topic and page numbers Chapter, Topic and page number	Sign when reading is completed		Date completed
		Student initial	Parent/guardian signature	
1	Ch 1. Getting started-what is nutrition p. 4-5			
2 & 3	Ch 5. Foods in Aust/fruit p.42,51 Ch 7. Dietary Guidelines p.72, p.78-83 Ch 2. Life's essentials/Fibre, Vitamins & Minerals p.14-15, 18-29			
4	Ch 5. Foods in Aust/Eggs p.47 Ch 7. Dietary Guidelines p.86-87 Ch 2. Life's essentials/protein p. 16-17			
5	Ch 5. Foods in Aust/Vegetables p.58-59 Ch 7. Dietary Guidelines p. 72-77, 79 Ch 2. Life's essentials/ nutrient losses p.28-28, revisit p.18-29			
6	Ch 5. Foods in Aust/Meat & poultry p.52-53 Ch 7. Dietary Guidelines p.79, 86-87, 90-91 Ch 2. Life's essentials/protein revisit p. 16-17, Fats p.10-13			
7	Ch 2. Life's essentials/carbohydrate p. 8-9 Ch 7. Dietary Guidelines Cereals and sugars p.72,73, 76-77, 94-95 Ch 11. Nutrition related diseases p.131, 132			
8 & 9	Ch 5. Foods in Aust/cereals p.44-46 Ch 7. Dietary Guidelines p.84 & 85 Ch 11. Nutrition related diseases p.1116, 142-148 Ch 14 Facts and Fallacies p.176-177			
10-12	Ch 12. Factors influencing food choices p.150-163 Ch 8. Tools for food selection p.102-109			
13	Ch. 16 Sources of nutrition information p. 188 - 189			
14-15	Ch 11. Nutrition related diseases p.1116-149			
16	Reading for revision			

VIDEO: SAFETY IN FOOD HANDLING (2003) Video Education Australasia VEA-ACT

[www.vea.com.au](http://www.vea.com.au)

VIEW SAFETY IN FOOD HANDLING AND ANSWER THE FOLLOWING QUESTIONS

1. WHAT DOES THE TERM "FOOD POISONING MEAN?"


2. IS FOOD SPOILAGE DIFFERENT. EXPLAIN YOUR RESPONSE.


3. LIST SOME COMMON EXAMPLES OF FOOD SPOILAGE


4. WHAT ARE THE MOST COMMON MICRO-ORGANISMS?


5. WHICH MICRO-ORGANISMS ARE RESPONSIBLE FOR FOOD SPOILAGE?


6. WHAT DOES 'PATHOGENIC' MEAN?


7. WHAT ARE THE SYMPTOMS OF FOOD POISONING?


8. WHAT ARE THE BEST CONDITIONS FOR THE GROWTH OF BACTERIA?


9. HOW DO RICE AND PASTA BECOME 'HIGH RISK?'


10. WHAT IS THE TEMPERATURE DANGER ZONE?


**CHAPTER 2: ENEMY TACTICS-CROSS-CONTAMINATION OF FOOD**

1. EXPLAIN CROSS-CONTAMINATION IN THE KITCHEN


2. WHAT ARE THE FOUR AREAS THAT ARE MAINLY INVOLVED IN CROSS-CONTAMINATION?


3. LIST THREE HAZARDS IN EACH OF THESE FOUR AREAS


**CHAPTER 3: TAKING ACTION-PRACTISING SAFE FOOD HANDLING**

4. HOW SHOULD WOUNDS BE TREATED?


5. LIST THREE PRACTICES FOR GOOD PERSONAL HYGIENE


6. OUTLINE THE STEPS TO CORRECTLY WASH HANDS AND THE AREAS THAT ARE MOST COMMONLY MISSED.


7. WHAT ARE TWO SAFE PRACTICES FOR EACH OF THE FOLLOWING?

A) Receipt of goods


B) Storage


C) Food preparation


D) Cleaning


E) Pest control


8. WHAT IS THE DANGER ZONE?


9. BRIEFLY EXPLAIN THE HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) SYSTEM.


## **Personal hygiene**

List 5 examples of appropriate personal hygiene in the Food Industry workplace and why it is important to follow these procedures.

1.

2.

3.

4.

5.

## **Sensory Evaluation Information**

### Is Seeing Believing?

All the senses are important when eating! Think about eating a potato chip – first you see the chip (maybe you notice if it has any dark/burnt spots?) Next you touch it (maybe you notice if it's greasy, or if it's thick?) Then as you bring the chip to your mouth you smell it (maybe you smell the seasoning? Or the oil it was fried or baked in?), then you eat it and hear the crunch of the chip, and you probably also taste the saltiness (maybe you also experience some additional flavour?). Imagine if any one these experiences were missing – would a chip be the same if you didn't hear it crunch in your mouth?

Do this activity between 2.

### **Aim**

To investigate the effects of sight and smell on your ability to identify and distinguish the taste of beverages

### **Equipment**

A sample set of tasting – each student is given 2 small samples of liquid which are labelled with a number.

### **METHOD**

1. Smell and sample each set and record on the sample sheet.
2. Tick the box that reflects the sweet, sour and intense flavour of the fruit.
3. Write answers to the questions below.
4. Record the answers from your group on the whiteboard in the room.

Did you rate the sweetness levels of the two beverages differently?

Did other members of the class rate the sweetness about the same? Compare your results with others in the class.

What about the sour or fruit flavour? Comment?

What affected your rating do you think?

What other changes could be made to the beverages that would affect the ratings.

What have you discovered about Sensory Evaluation? Why do you think the commercial food industry uses this method to assess products?

*Reference: Institute of Food Technologists*

## Occupational Safety and Health and The Food ACT 1985

Read the TAFE handout, pages 13-18 and answer the following questions:

1. What is the main focus of the Occupational Health and Safety Act?
2. What elements are vital for any OSH program to be successful?

In the Food Industry any person who handles food for sale must adhere to THE FOOD ACT 1985. This Act specifies elements which a chef/cook and you have direct control over and for which you are responsible for when working with food.

3. What is the focus of The Food Act 1985?

4. When providing food for sale people must abide by The Food Act 1985

Can you give 3 examples of what a person is required to do or follow under this Act?

- 1.

- 2.

- 3.

5. Make a list of things you can do to avoid personal injury in the workplace.

6. Make a list of things you can do to ensure your workplace/classroom is a safe environment.

## Garnish worksheet

Use the reference book *Catering Towards a Career* page 114 to 118 to complete the following summary of garnishes.

Garnish example	Description	Diagram	Ingredients used	Types of recipes/food dishes the garnish can be used on.
Twists				
Cones				
Curls				
Julienne				

Wedges				
Fans				
Vandyke				
Turning				
Roses				

Scoring				
Croutons				
Slicing				

## More on..... Garnishes

The term Garnish is usually referred to savoury foods and usually means a small item of food placed on a dish prior to serving to enhance its appearance. A garnish should not dominate the food, it should become a feature or focal point to attract the eye and highlight the dish.

### Garnishes are used to:

Add interest: for example to lift the appearance of the food such as an asparagus spear arranged on top of a pasta dish

Colour: to contrast and add balance- dark grapes and wine leaves placed alongside a wedge of brie cheese

Texture: e.g. to stimulate the palate e.g. ice cream with a wafer biscuit

Taste: e.g. to provide a pleasant blend of flavours e.g. cream soup with fried croutons

Shape: e.g. to create variety to the plate e.g. star fruit with melon balls

Information- to let the consumer know what is in the food e.g. apple pie with leaves made from pastry, pumpkin soup with a swirl of sour cream

Tradition: some garnishes are traditionally served with certain foods e.g. fish and chips with a lemon wedge

### Simple garnishes

Vegetables e.g. julienne carrots, spring onion curls, cucumber twists

Herbs e.g. sprigs of parsley, rosemary

Fruit e.g. strawberry fan, melon balls

### Complex garnishes

Vegetables e.g. brunoise of capsicum or a turned mushroom

Herbs e.g. a combination of fennel, coriander, dill, parsley, watercress or alfalfa

Fruit e.g. kiwi fruit, strawberry and passionfruit as a topping for pavlova

Types of foods used are: fruits, vegetables, breads (crouton) herbs, nuts, cheese, cream and sauces, spices

### For soups:

Consommés and bouillons e.g. croutons, julienne vegetables, vermicelli, mini choux pastries and puff pastries, herbs

Broths e.g. chopped fresh herbs

Purees e.g. swirled creams, freshly chopped herbs

Bisque e.g. swirl of cream, chopped sprigs of herbs

Chowders e.g. chopped parsley

Cold soups e.g. ground hazelnuts, swirl of cream

Garnishing tools used in food presentation include: zester, channel knife, parisienne scoop or melon baller

### Melon and citrus fruit salad

<b>COURSE :</b> Breakfast/ Dessert	<b>NAME OF DISH:</b> Melon and Citrus Fruit Salad	<b>No. Portions:</b> 1	
		<b>Serving dishes required:</b> clear bowl.	
		<b>Garnish/decoration used:</b> Fresh Mint.	
Stage	Ingredients and quantity	Method	Equipment
1.	Orange 1- segmented and cut in half Rockmelon $\frac{1}{4}$ - melon balls Watermelon 1 thick slices - seeded and macedoine Banana $\frac{1}{2}$ - paysanne Strawberry 1- fan Green Grapes 2-van dyke Mint - fresh for garnish Passionfruit pulp- 1T Dollop of yoghurt	1. Prepare food as per instructions and serve in clear glass bowl with garnish.	Parisienne scoop  Paring knife Chefs knife Cutting board and mat  Table spoon

**Evaluation:**

Was your fruit salad appealing to the consumer? Why? (hint: comment on the aesthetics of the dish)

What OSH procedures did you apply when preparing your fruit salad **and** explain why these are important?

Name two garnish utensils and what shape they create - draw diagrams.

**Task 1: Tutorial 1, 2,3,4,5 and 6**

Student name \_\_\_\_\_ Date due \_\_\_\_\_

**Tutorial 1: FRUIT**

Fruit is a fabulous food because it can be eaten any time of day and provides a wide range of different textures, tastes, micro and macro-nutrients. Fruit can be eaten raw as a whole part of a plant, (the seed and the fleshy pericarp which surrounds it minus the skin (cellulose wall) eg banana, kiwifruit) but often the surrounding flesh forms the edible part and the seeds are discarded eg, apples, apricots. Fruit can also be consumed in many other ways and can be processed to make products such as jam, fruit juices/drinks and canned fruit varieties.

There are many ways of classifying fruit including citrus, tropical, stone, berries, vine or hard fruit.

**Can you give two examples for each category?**

<i>Citrus</i>	<i>Tropical</i>	<i>Stone</i>	<i>Berries</i>	<i>Vine</i>	<i>Hard</i>

Many fruits can be dried (such as sultanas and prunes) and after the drying process some are given different names. For example, the grape becomes sultana, plum becomes a prune.

**Fruit: Physical and chemical properties: colour change, cell structure and nutrients.**

The cell walls of plants differ from those of animals in that plant cells have a rigid framework which is made up of cellulose material and this serves to form a container for the cells contents. The major component of the plant cell wall is non-soluble cellulose (known as dietary fibre) together with the more soluble (can be digested) hemicellulose and pectic substances.

**What you will need per group of 4 students:**

- 2 large Granny Smith Apples
- 75g white sugar
- Peeler, corer, paring knife, cutting board,
- 4 small white plates
- 2 small saucepans with lid
- Timer/to record cooking time (watch with seconds)

## Instructions for experiment

Working in groups of 4, wash, peel, core and cut (accurately) into quarters, two large Granny Smith Apples.

1. Using a  $\frac{1}{4}$  of the apple, record the shape (draw), size (measure depth and length in mm), colour and flavour. Place on a small plate-this is your "control"
2. Put another  $\frac{1}{4}$  piece on a saucer and set aside for observation. After 15 minutes observe and record any changes that occur to that piece.
3. Accurately measure 200ml of water and place this into one very clean saucepan. Bring the water to the boil and add three  $\frac{1}{4}$  pieces of the apple. Simmer until just tender. Hold with the lid on for a further 4 minutes and record the total cooking time. Drain and place on small plate. Allow to cool. Observe and taste the sample. After each tasting allow a minute or two and then exhale vigorously. Note any aftertaste.
4. In another saucepan, accurately measure and dissolve 75g of sugar in 200ml of water. Bring the liquid to the boil, add three  $\frac{1}{4}$  pieces of apple. Simmer until just tender. Hold with the lid on for a further 4 minutes and record the total cooking time. Drain and place on a small plate. Allow to cool. Observe and taste the sample. After tasting allow a minute or two and then exhale vigorously. Note any aftertaste.

Record the results for number, 1, 2, 3 and 4 in the table. And then answer the following questions.

***Fruit: Effect of processing on physical and chemical properties***

	<b><i>Size (mm) Draw</i></b>	<b><i>Shape (illustrate and describe) eg: defined lines and edges. Rounded, sharp etc</i></b>	<b><i>Colour (describe) Eg: light yellow/green chlorophyll, More yellow, less green, other colour?</i></b>	<b><i>Flavour (and aftertaste)  Crisp, sour, bland etc</i></b>	<b><i>Cooking time  (minutes)</i></b>
<b><i>1</i></b>	<b><i>Length: Width: Height:</i></b>				<b><i>Zero minutes</i></b>
<b><i>2</i></b>	<b><i>Describe any changes after apple has been exposed to air for 15 minutes</i></b>				
<b><i>3</i></b>	<b><i>Length: Width: Height:</i></b>				
<b><i>4</i></b>	<b><i>Length: Width: Height:</i></b>				

Analysis of experiment:

1. Explain the colour change recorded in 2.

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2. Why is the colour of 1 different from that of 4? (Think pigment and cooking process)

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3. Why is the size of 1 larger than that of 3?

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Which product contains the most kilojoules (energy)?

Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Which product contains the most dietary fibre? Vitamins Why

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6. Which product contains the most

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7. Give three ways to prevent oxidation occurring in fruit and some vegetables.

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## Task One: PART B: Practical 1.FRUIT

Functional Properties: Dextrinisation and Oxidation

COURSE : Dessert		NAME OF DISH: Teacup Apple and Berry Crumble.	No. Portions: 1	
			Serving dishes required: Teacups with saucer.	
			Garnish/decoration used: Icing sugar and dollop of cream.	
Stage	Ingredients and quantity	Method		Equipment
1.	1 granny smith apple Castor sugar - 2 tsp Water - 1 T Clove - 1	1. Pre heat oven to 200C. 2. Lightly grease teacup and place on baking tray. 3. Peel, core and slice apple. 4. Add to saucepan with sugar, clove and water. 5. Cover and cook over low heat for 3 minutes or until apple is soft. Drain and remove clove. Set aside.		
2.	Flour plain 3 T Cinnamon $\frac{1}{4}$ tsp Brown sugar 1T Oats 2 T Butter 40g Frozen Berries $\frac{1}{4}$ cp frozen  Icing sugar Thickened cream	6. Place flour, cinnamon, brown sugar, and oats in a bowl. Rub in butter.  7. Place apples in base of tea cup and sprinkle berries on top.  8. Add crumble to the top of fruit mixture.  9. Place on tray and bake for 15 to 20 minutes or until golden brown.  10. Serve with icing sugar dusted on top and a dollop of thickened cream.		

Define the term: Dextrinisation and which ingredient does this relate to in this recipe?

Identify the two methods of cookery used in this recipe and name some other ingredients that are suitable for this method.

What Occupational Health and Safety points did you consider when producing this recipe? And why is this important?

When preparing and presenting this recipe, what modifications would you make and why? (hint think, ingredient use, nutritional qualities, food processing skills, bench management, time management etc)

Glue photograph of finished dish here

And annotate sensory evaluation: taste, aroma, visual appeal, texture

Student name \_\_\_\_\_ Date due \_\_\_\_\_

### **Tutorial 2: EGGS**

In Australia there are more than 13 million hens producing approximately 2.4 billion eggs per year and the average Australian consumes about 140 eggs per year. How many eggs do you think you eat each year? Eggs are an excellent source of protein, are relatively low in fat and cholesterol, they provide Vitamin B12 and Iron and eggs perform a variety of functions in many culinary productions. (See NTIS text, p. 47 for specific nutritional properties)

Eggs perform many functions some of these are:

- They enrich food by providing extra nutrients
- They help to bind or hold food together
- They thicken dishes such as custards. (process known as coagulation)
- Eggs are used to coat foods to protect them when cooking
- And they aerate food like meringue and sponge where the whipped eggs lighten the mixture before baking. (Compton, L & Warren, C. 2008 p. 223)

Can you think of any others?

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### **Eggs as coagulating agents**

**Did you know...**

Egg and milk mixtures (such as quiches, custard tarts,) can be prepared by adding heat which will coagulate the protein content of the egg. The coagulation process will set or thicken the mixture. The proportion of egg to milk and whether the mixture is stirred during cooking will influence the consistency of the final product. The egg yolk and white coagulate at different temperatures and the addition of sugar will change the setting power and time.

Egg yolk coagulates at 65-70 degrees, while the egg white (albumen) at 60 degrees.

**Let's find out...**

### **What you will need per group of 4 students:**

1 cup whole milk

2 eggs

1 T castor sugar

$\frac{1}{2}$  t vanilla

Nutmeg

2 ceramic dishes

Access to microwave

1 small saucepan

## Instructions for experiment - Egg and milk mixtures

Working in groups of 4 students

Ingredients	Method of preparation
1 cup milk	1. Beat eggs, sugar and vanilla with a whisk. Strain to remove chalazae
2 eggs	2. Put milk in a small saucepan and heat till just boiling.
1 T castor sugar	3. While whisking, add milk, slowly to the egg mixture.
$\frac{1}{2}$ t vanilla	4. pour into 2 ceramic dishes and sprinkle with nutmeg
Nutmeg	

7. Prepare mixture as above.
8. Arrange the cups at equal distance from the centre of the microwave oven.
9. cook on Low-Med setting for 4 minutes (This is a suggested time only)
10. Determine if it is cooked- To test if it is fully cooked, insert a knife into the centre of the custard. When the knife come out clean, the custard is done. Don't forget "stand time" allows the custard to keep cooking, so the idea is to remove the custard before the clean knife condition occurs.
11. Allow the custards to cool.
12. Evaluate custard mixtures according to their colour, flavour, and texture. The ideal product is smooth and has no visible air bubbles within it.
13. Record your perceptions in the table below:

Colour	Flavour	Texture	Cooking Time

Explain the physical and chemical changes that have taken place when producing your custards?

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Eggs provide a range of nutrients and they have a purpose in our diet. According to the Australian Dietary Guidelines (Reynolds, 2008, p. 86 & 87) where are eggs included?

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**Examine Table 7.13 Iron content of animal sources of foods (well absorbed)**

How would you rate the iron content of an egg compared to other animal sources?  
In your response also make reference to the Recommended Dietary Intake requirements for Iron and the effect on health.

Food	Serve size	Iron (mg)
Liver, lamb, cooked	1 small serve 100g	10.1
Beef, rump, grilled	1 small serve 100g	3.4
Sausages, beef, grilled	2 average (100g)	2.4
Chicken breast, grilled	1 small serve (100g)	0.7
Fish, grilled	1 fillet (100g)	0.8
Egg	1 medium (50g)	1.0

(Source: Xyris Software (Australia) PTY LTD, 2008) Reynolds, J. (2008). *Nutrition the Inside Story*. ACT Australia: HEIA.

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Is it worth paying the extra money for free-range eggs versus the other varieties available?  
Why or why not?

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**References:** Quin, D. (2002). Experiment: FRUIT adapted from Edith Cowan University.  
Compton, L & Warren, C. (2008). *E-Food & Technology*. VIC: Oxford University Press.  
Reynolds, J. (2008). *Nutrition the Inside Story*. ACT Australia: HEIA.  
Saxelby, C. (2006). *Nutrition for Life*. Victoria: Hardie Grant Books.

## Task One: PART B: Practical 2. EGGS

### Functional Properties: Emulsification and coagulation

NAME \_\_\_\_\_

Stage	Ingredients and quantity	Method	Equipment
<p><b>COURSE</b> Entrée or Side Dish</p>	<p><b>NAME OF DISH</b> Caesar salad with sourdough croutons and poached egg.</p>	<p>No. Portions: Between 2</p> <hr/> <p>Serving dishes required: Entrée Plate</p> <hr/> <p>Garnish/decoration used: Croutons and parmesan cheese</p>	
<p>1</p>	<p>6 Cos lettuce leaves 2 slices bacon 1 anchovy fillet 20g Shaved parmesan cheese 1T fresh parsley 1 Tsp olive oil 1 thick slice sour dough bread-crust removed and cut into cubes.</p> <p>2 eggs 2 tsp white vinegar</p> <p><b><u>Dressing</u></b> 3 eggs 1 clove garlic Salt 2 anchovy fillets, chopped 2 tsp Dijon mustard</p>	<p>Wash lettuce leaves well, pat dry and cut lengthwise into quarters. Divide lettuce between two plates.</p> <p>Heat a little olive oil in a fry pan and sauté bacon and bread until crisp and golden. The croutons may need to be turned once or twice. (Can also grill bacon if preferred). When bacon is cool, crumble over cos leaves and scatter with croutons.</p> <p>Place poached egg on each salad and a little of the anchovy. Generously drizzle over Caesar dressing.</p> <p>To serve, garnish with some parmesan and finely chopped parsley.</p> <p><b><u>To poach eggs</u></b></p> <ol style="list-style-type: none"> <li>1. Poach eggs, by bring water to boil, and reduce heat to simmering. Add white vinegar.</li> <li>2. Add eggs by dropping in gently into water and hold a spoon to keep the egg together. Simmer until eggs are just cooked.</li> <li>3. Trim edges.</li> </ol> <p><b><u>Caesar dressing: serves 10</u></b></p> <ol style="list-style-type: none"> <li>1. Boil eggs for 4 minutes, and then run under cold water for a minute. Crack each egg over a small bowl with a sharp knife and scoop out contents (make sure you don't include any shell).</li> </ol>	<p>Chopping board</p> <p>Frypan Tongs Chef's knife</p> <p>Saucepan</p> <p>Serving plate</p> <p>Food processor Small bowl Saucepan Measuring cups</p> <p>Storage</p>

	1 tsp lemon juice 1 T red-wine vinegar 1 T grated parmesan ½ cup olive oil Pepper	2. Transfer to a food processor and process until smooth and creamy. 3. Work garlic to a paste with a pinch of salt, then combine anchovies, mustard, lemon juice, vinegar and parmesan and with motor still running, add to eggs. 4. Still while the motor is running, gradually dribble in oil. (This will allow the oil and vinegar to be emulsified with the egg). 5. Taste and adjust salt and pepper. Pour dressing into a jar and cover until needed.	container
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**Evaluation:**

Define the term:

Emulsification

Coagulation

Identify the dry and wet methods of cookery used in this recipe and name some other ingredients that are suitable for this method.

What is the temperature for boiling? Why is the temperature reduced for the poaching of an egg?

Why is the vinegar added to the water for poaching of an egg?

The golden brown colour of the croutons is due to which functional property change?

What are some important points to consider when making an emulsion?

Student name \_\_\_\_\_ Date due \_\_\_\_\_

**Tutorial 3: Vegetables**

There are many varieties of vegetables which can be prepared in a range of ways for consumption. Vegetables, like fruit are the edible parts of plants. Often the best way to benefit nutritionally is to eat the freshest produce and to eat vegetables uncooked. However, vegetables such as the potato which have a high starch content and can not be eaten raw (due to the cellulosic material which surrounds it) and therefore requires, heat and water (in the cooking) process to render the starch available for human digestion.

There are many ways of classifying vegetables including bulb, root, tuber, seed, fruit, stem, flower, leaf, fungus and shoots and sprouts.

Can you give two examples for each category?

<i>Bulb</i>	<i>Root</i>	<i>Tuber</i>	<i>Seed</i>	<i>Fruit</i>	<i>Stem</i>

<i>Flower</i>	<i>Leaf</i>	<i>Fungus</i>	<i>Shoots &amp; sprouts</i>

*What are some of the nutritional benefits of eating raw vegetables? (Hint: think about the water content-hence the kilojoule content, the fat content, the sugar content, the vitamin and mineral content etc)*

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**Vegetables: texture, colour and vitamin retention**

Did you know...

The application of heat, acid or alkali (bicarbonate soda) to vegetables contributes to physical and chemical property changes- plant structure and/or the pigments (colour) in the plants.

## Let's find out...

Two parts to experiment:

### What you will need per group of 4 students:

400g stringless beans  
2 small saucepans with lid  
 $\frac{1}{4}$  teaspoon baking soda  
2 small plates  
2 medium test tubes with stoppers  
2 medium size beakers  
1 test tube stand  
Marking pen for labelling  
0.1% Dichlorophenol indophenol solution  
2 droppers

### Instructions for experiment-texture and colour in vegetables- green beans

Working in groups of 4 students.

14. Wash and trim 400g beans.
15. Cut the beans into 5cm lengths and divide the prepared beans into two equal amount.
16. Accurately measure 300ml water and place in one small saucepan. (a)
17. Accurately measure another 300ml water and place in another small saucepan. To this saucepan add  $\frac{1}{4}$  teaspoon baking soda. (b)
18. Bring the water in both small saucepans to a gentle boil and weigh an equal amount of beans into each saucepan.
19. Cover and boil both saucepan contents very gently for 7 minutes (time this exactly).
20. Remove the two saucepans from the heat. Drain and place the beans onto two, separate, white labelled plates. (a: green beans, b: greens beans with soda).
21. Place the cooking liquid into two separate, labelled beakers (label A and B).

Working independently: compare the colour, texture and flavour of the cooked products and record your perceptions below.

Score each factor with a number:

- 5=very desirable  
4=desirable  
3=acceptable  
2=slightly acceptable  
1=undesirable

	Colour	Texture	Flavour
A) Green Beans			
b) Green beans with soda			

### Part B: Vitamin Retention in Vegetables

Working in the same group: test each of the two cooking waters from the beans for the presence of vitamin C.

1. Place 10 drops of 0.1% dichlorophenol indophenol in a test tube. The dye should be dark blue.
2. Add the (cool) cooking water, drop by drop, to the dye. Shake the tube vigorously after the addition of each drop.
3. If the dye turns colourless, vitamin C is present.
4. Record the number of drops of the cooking water required to turn the dye colourless. (The more drops of cooking water necessary to turn the dye colourless the less Vitamin C present. Do not use more than 80 drops of cooking water).
5. Record your observations and conclusions in the table below.

Cooking water	Number of drops	Conclusion and comments
a) Cooking liquid from beans (no alkali) No bicarb-soda		
b) cooking liquid from beans (with alkali-bicarb soda)		



# Task One: PART B: Practical 3.VEGETABLES and fats

Functional Properties: Emulsification and coagulation

NAME \_\_\_\_\_

Stage	Ingredients and quantity	Method	Equipment												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%; text-align: center;">COURSE Side Dish</td> <td style="width:20%;">NAME OF DISH <b>Steamed Vegetables</b> with Hollandaise Sauce</td> <td colspan="2">No. Portions: Between 2</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">Serving dishes required: Entrée Plate</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">Garnish/decoration used: Brunoise Capsicum</td> </tr> </table>				COURSE Side Dish	NAME OF DISH <b>Steamed Vegetables</b> with Hollandaise Sauce	No. Portions: Between 2				Serving dishes required: Entrée Plate				Garnish/decoration used: Brunoise Capsicum	
COURSE Side Dish	NAME OF DISH <b>Steamed Vegetables</b> with Hollandaise Sauce	No. Portions: Between 2													
		Serving dishes required: Entrée Plate													
		Garnish/decoration used: Brunoise Capsicum													
1.	4 Asparagus 2 Broccoli Flowerettes 1 carrot 1/8 red capsicum	Wash and trim asparagus and broccoli. Wash and cut carrot into paysanne. Wash and brunoise capsicum.  Prepare Steamer	Chopping board Chefs Knife												
2.	3Tbl wine vinegar 1 bay leaf 5 softened peppercorns	Place wine, bay leaf and peppercorns in a small saucepan and reduce to 1 tablespoon by boiling. Strain into a glass  Whisk eggs, salt and teaspoon butter.  Simmer water in a saucepan	Steamer  Saucepan Glass												
3.	2 egg yolks pinch of salt 1 t butter	Set bowl in saucepan and beat with a whisk until slightly thickened.  Add strained vinegar and mix well	Small metal bowl												
4.	110gm softened butter cut into cubes	Add butter, bit by bit, decreasing the temperature as the sauce thickens and as more butter is added.	Saucepan												
5.		When sauce is light and thick take off the heat and whisk for 1 minute.	Wooden spoon												
6.	2tsp lemon juice salt and pepper	Season and add lemon juice.  Keep warm by standing in a bowl of hot water.	Whisk												
7.		Steam carrot 5 minutes													

8		broccoli 3 mins. asparagus 2 mins.	
9.		Serve sauce over vegetables and garnish with capsicum.	

**Evaluation:**

What is the main method of cookery used in this recipe?

Explain the advantages and disadvantages of using this method? (hint, think aesthetics, nutrition properties, time, energy etc)

How did the final product look/taste like? (Describe flavours, textures and visual appeal through use of garnish)

What factors did you need to consider when preparing your vegetables?(hint, think- mis en place, storage, washing, cutting size, aesthetics)

Were the vegetables over or under steamed? What could you do next time?

Explain the function of the egg yolk in making the hollandaise sauce? (hint, use correct term)

Did the Hollandaise sauce curdle or was it of the correct consistency? If it curdled, how could you prevent this next time?

Student name \_\_\_\_\_ Date due \_\_\_\_\_

**Tutorial 4: Meat**

Meat is made up of water, protein, fat, water and fat soluble organic materials and water soluble vitamins. Meat is an important source of essential amino acids, minerals and vitamins and provides a secondary source of energy for the body. All meat includes lean muscle fibres and connective tissue, fat and bone. Meat still forms a major source of protein in the diet of many Australians, despite the adoption of vegetarian diets.

***How does meat contribute to nutrition in the Australian diet? (Hint: think about Macro-nutrients and vitamin and mineral content and their function)***

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**Did you know?**

The application of heat and acid to meat contributes to several physical and chemical property changes.

**Let's find out...the effect of tenderisers on the structure, colour and flavour of meat.**

Two parts to experiment:

**What you will need per group of 4 students:**

240g meat pieces suitable for grilling on a kebab stick (2.5 cm x 2.5cm cubes)

3 skewers-kebab sticks (soaked in water previously)

$\frac{1}{4}$  t commercial meat tenderiser

2 T marinade (pepper, salt, fresh garlic, ginger, lemon juice)

Grill

3 small plates

Marking pen for labelling

### Instructions for experiment

Working in groups of 4 students

22. Cut the meat into pieces suitable for grilling on a kebab stick 2.5cm x 2.5cm cubes.
23. Divide the meat into three equal sections and apply each of the following conditions to one lot of meat.
  - a) No treatment (unmarked wooden skewer) this is the control
  - b) Sprinkle  $\frac{1}{4}$  tsp commercial tenderiser
  - c) 2 T marinade-and allow to stand for 20 minutes
24. Obtain 3 skewers and mark them- a b c (alfoil on skewer)
25. Thread meat onto skewer and grill each kebab until done (use identical conditions and time for all three kebabs) watch the griller and turn the kebabs to ensure even cooking.
26. Set the labelled kebabs on a plate and complete the table below. (the centre of the meat pieces needs to be visible for evaluation)
27. For tenderness and overall quality rank as follows:

Score each factor with a number:

5=very desirable,4=desirable,3=acceptable,2=slightly acceptable,1=undesirable

Cooked product	Colour	Flavour/odour (taste test)	Tenderness/fibrous structure (tear apart)	Overall quality
No treatment (a)				
Commercial tenderiser (b)				
Marinade ©				

Comment on the above results...what factors affect the tenderness of meat?

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## Task One: PART B: Practical 4. MEAT

Functional Properties: Denaturation, Coagulation and Caramelisation

Name \_\_\_\_\_

Stage	Ingredients and quantity	Method	Equipment										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="3" style="width: 15%; vertical-align: top;"> <b>COURSE :</b> Main course.                 </td> <td style="width: 40%;"><b>NAME OF DISH:</b> Garlic and Lemon Kebabs</td> <td colspan="2"><b>No. Portions:</b> 2</td> </tr> <tr> <td></td> <td colspan="2"><b>Serving dishes required:</b> square white plate.</td> </tr> <tr> <td></td> <td colspan="2"><b>Garnish/decoration used:</b></td> </tr> </table>				<b>COURSE :</b> Main course.	<b>NAME OF DISH:</b> Garlic and Lemon Kebabs	<b>No. Portions:</b> 2			<b>Serving dishes required:</b> square white plate.			<b>Garnish/decoration used:</b>	
<b>COURSE :</b> Main course.	<b>NAME OF DISH:</b> Garlic and Lemon Kebabs	<b>No. Portions:</b> 2											
		<b>Serving dishes required:</b> square white plate.											
		<b>Garnish/decoration used:</b>											
1.	250g diced lamb 1 lemon 1/3 cup lemon juice 3 cloves garlic 1 sprig of fresh chopped rosemary leaves 1 tsp seasoned pepper 2 tsp mild mustard 40 ml olive oil  10 g butter	1. Using a vegetable peeler, peel rind thinly from lemon, cut rind into thin strips. Combine lamb and rind in bowl. Pour over combined lemon juice, garlic, rosemary, pepper, mustard and oil. Mix well and leave over night. 2. Drain lamb from marinade, reserve the liquid. 3. Thread lamb onto skewers. Grill kebabs until browned on the outside. 4. Place reserve marinade into a sauce pan, add butter and cook uncovered until slightly thick. Serve with kebabs.											
2.	2 tomatoes - roma 100g sweet orange potatoes (orange) 1 Spanish red onion 1/2 zucchini 1/4 cp freshly chopped parsley 1 tsp dill, dried. 3 leaves of mint, fresh, finely chopped. 1 clove garlic, crushed. Salt and pepper 20 ml olive oil.	Roasted Vegetables.....  1 Cut tomatoes into long thin sections (into 8's). 2 Peel and thickly sliced potatoes. 3. Peel and cut onions (4's) into wedges. Cut zucchini into lengthways, then into 3 cm lengths. Lightly grease a baking dish, vegetables into layers, finishing with tomatoes on top. Sprinkle with herbs, garlic, salt and pepper. Drizzle with oil. Bake uncovered in hot oven (220C) for 40 minutes. Stir gently halfway during cooking process. Arrange roasted vegetables on plate and serve with kebabs.  As this lesson is being done over two lessons - prepare vegetables and marinade meat in the first lesson, and in the next lesson roast vegetables and grill lamb.											

**Research/Evaluation:**

Explain the OSH factors you needed to consider when making this recipe?

Which methods of cookery were used in making this recipe?

How does a marinade tenderize meat and why is it used in a grilling method.

List five other cuts of meats that could be used in kebab making and explain why are they suitable.  
(Use diagram to assist)

Explain two factors that should be considered when selecting meat for a particular purpose

Student name \_\_\_\_\_ Date due \_\_\_\_\_

## **Tutorial 5: Carbohydrate- Sugar**

Carbohydrate is a macro-nutrient made up of carbon, hydrogen and oxygen. It is the result from a process known as photosynthesis in plants. All Carbohydrate foods are from plant sources and plant foods also provide the essential non nutrient-dietary fibre. Animal products contain very little carbohydrates and only in the form of sugars (For example, lactose in milk). Carbohydrate is the body's preferred source of energy. Carbohydrates from starches (bread, pasta, rice, fruits and vegetables) are better food sources than carbohydrates from simple sugars such as soft drinks and lollies because they also provide the body with other important vitamins and minerals. Sugar is a carbohydrate that is easily absorbed into the bloodstream to provide energy.

Did you know ....1 gram of carbohydrate provides you with 16 kilojoules of energy?  
1 gram of protein provides you with 17 kilojoules of energy and 1gram of fat provides you with 37 kilojoules....which foods do you think provide you with the most nutrients and help to maintain an ideal body weight?

It is recommended to consume sugar and foods high in this carbohydrate in small amounts because sugar, has been linked to tooth decay, and indirectly to being overweight because it is not filling/satiety, sugar makes food high in fat such as ice cream and cakes more enjoyable and therefore easy to over eat and high sugar food may replace more nutrient dense foods, for example, a chocolate bar instead of an apple. Apart from energy, however, sugar has an important role in food manufacturing in that sugar adds taste, texture and colour to baked items such as cakes and biscuits, it helps to preserve food such as fruit, in jam making, and sugar increases the boiling point of food, when making confectionary or reduces the freezing point when making ice cream.

There are many different varieties of sugar, but there is little difference to the nutritional content. Sugar is added to many foods and the Australian Food Standards Code requires that when food is labelled "without added sugar' or 'no sugar added', the product must not contain any added sugars, honey, malt, lactose or maltose but may contain naturally occurring sugar.

*How much sugar do you do?*

**Let's find out...about energy drinks**

**What you will need per class:**

1 x Red bull 355ml

1x Red bull sugar free 355ml

1x Powerade 600ml

1x Drink-Mother 330ml

1 x Other

Small paper cups for tasting

**Instructions**

Working in groups of 4 students

28. Examine the drinks provided and complete the following table.

Drink	Size of bottle/carton	Caffeine content per serve	Caffeine content per 100ml	Sugar content per serve	Sugar content per 100ml	Calcium content per serve	Calcium content per 100ml	'special ingredients'

Many of these beverages are marketed as energy drinks- Comment on this statement (hint: what are manufacturers claiming?)

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What might be some of the affects of consuming these types of beverages on a daily basis? (Think about, social, health, economic and environmental aspects)

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**Innovation/trend and misconceptions**



sugar. Supersaturation is an unstable state. The sugar molecules will begin to crystallize back into a solid at the least provocation. Stirring or jostling of any kind can cause the sugar to begin crystallizing. The fact that sugar solidifies into crystals is extremely important in candy making. There are two categories of candies- *crystalline* (candies which contain crystals in their finished form such as fudge and fondant) and *non-crystalline*, or amorphous (candies which do not contain crystals, such as lollipops, taffy and caramels). Recipe ingredients and procedures for non-crystalline candies are specifically designed to prevent the formation of sugar crystals because they give the resulting candy a grainy texture. When sugar is heated to extreme temperatures to create a brown substance such as a toffee or caramel sauce the process is known as caramelisation (we will look at this more closely when making-toffee chards).

### **Making Rock Candy- CRYSTALLISATION**

#### **Practical demonstration**

#### **What you will need:**

4 cups sugar

2 cups water

A small saucepan, a wooden spoon, a candy thermometer, a small clean glass jar, a measuring cup, cotton string, a weight to hang on the string (such as a screw or galvanized washer), waxed paper, a pencil (to suspend the string in the jar).

1. Heat the water in the saucepan over medium-high heat until it comes to a boil.
2. Completely dissolve the sugar in the boiling water, stirring continuously with the wooden spoon until the solution grows clear and it reaches a rolling boil.
3. Remove the solution from the heat, and then carefully pour it into the jar. Cover the jar with a small piece of waxed paper.
4. Tie the weight to one end of the string, and then tie the other end to the middle of the pencil. The string should be about two-thirds as long as the jar is deep. Dip the string into the sugar solution, remove it, lay it on a piece of waxed paper, straighten it out, and let it dry for a few days.

#### ***Why does the string need to be soaked and then dried?***

The string will provide the surface on which the sugar crystals will grow. As water evaporates from the string, small crystals of sugar will encrust the string. These tiny *seed crystals* provide starting points for larger crystals. Future growth will be concentrated around these points.

5. Gently suspend the prepared string in the solution and let sit at room temperature, undisturbed, for several days. You can check each day to see how much your crystals have grown. It's tempting, but don't touch the jar until the experiment is finished-it usually takes about 7 days. The rock crystals grow molecule by molecule. Your finished rock candy will be made up of about quadrillion (1,000,000,000,000,000) molecules attached to the string.

Define the term 'crystallisation'

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How can crystallisation be prevented? Comment on at least 3 ways.

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**References:** Compton, L & Warren, C. (2008). E-Food & Technology. VIC: Oxford University Press.  
Curtin University of technology, (2008). Sweetners and sugars & section on Crystals  
Saxelby, C. (2006). Nutrition for Life. Victoria: Hardie Grant Books.

## Task One: PART B: Practical 5. Carbohydrates/sugar

The role of sugar in food preparation and processing-

Functional properties-Caramelisation and Crystallisation

COURSE : Dessert		NAME OF DISH: Strawberry Jam		No. Portions: between 4	
				Serving dishes required: jam jars and lid	
				Garnish/decoration used: .	
Stage	Ingredients and quantity	Method		Equipment	
1.	250g Strawberries 1 T lemon juice 250g Sugar 12.5g Jam setter	<p>Hull strawberries</p> <p>Sterilize jar by washing in hot soapy water and then placing the jar and lid in the oven at 120 degrees for 15 minutes.</p> <p>Place lemon juice and strawberries in a saucepan over very low heat and cook, stirring occasionally, for 15 to 20 minutes until strawberries are soft.</p> <p>Microwave sugar for 1 minute until warm.</p> <p>Add the sugar and jam setter to the strawberries and cook for a further 5 minutes, stirring occasionally until sugar dissolves.</p> <p>Run a wooden spoon around the corners and base of the pan to make sure all the sugar is dissolved. Increase the heat to medium and bring the jam to a gentle rolling boil. Cook for a further 4-5 minutes, then remove the pan from the heat.</p> <p>Take a cold plate from the freezer. Spoon a little jam onto it and pop back into the freezer for 1 minute to cool. Remove the plate from the freezer and run your finger through the cold jam-if it wrinkles its set. If not return the jam to boil for a further 1-2 minutes and repeat this process until the required set is reached.</p> <p>Take a dessert spoon and skim off as much white froth (impurities) from the pan.</p> <p>Ladle the jam into the sterilized jars. Cover and close the lid.</p> <p>Cool then label the jar.</p>		<p>Chopping board</p> <p>Vegetable knife</p> <p>Glass jar and lid</p> <p>Saucepan</p> <p>Measuring cup</p> <p>Measuring spoons</p> <p>Wooden spoon</p>	

## Task One: PART B: Practical 5. Carbohydrates/sugar

The role of sugar in food preparation and processing-

Functional properties-Caramelisation and Crystallisation

COURSE : Dessert		NAME OF DISH: Toffee Chards		No. Portions: between 4	
				Serving dishes required:	
				Garnish/decoration used:	
Stage	Ingredients and quantity	Method		Equipment	
1.	1 cup sugar 1/4 cup water 1tsp lemon juice	21. In a very clean saucepan, dissolve sugar in water. 22. Carefully remove any sugar from the edge of pan, by brushing down the sides of the saucepan with water 23. Place saucepan over heat. Bring to the boil and then reduce the temperature to medium heat 24. Do not stir sugar solution at any time during the cooking process. If needed (when crystals start to form) add 1 tsp of lemon juice 25. Carefully monitor colour change. Once a golden brown colour has been reached, <u>turn off</u> the heat. The sugar will continue to caramelize even when the heat has been turned off 26. Safely and quickly pour caramel/toffee onto prepared baking trays as thinly as possible. 27. Allow to cool and then break up for decorating sponge cake 28. keep toffee chards in an airtight container.		Saucepan Measuring cup Measuring spoons Wooden spoon  Gladbake paper lined baking tray	

Define the term: Caramelisation and which ingredient does this relate to in the jam and toffee chard recipes?

Think back to previous practical lessons,

Can you identify another time you experienced caramelisation when cooking? Which ingredients were involved and how does this change the texture, flavour and visual appeal? (hint: think about dry cooking methods)

In this recipe, what steps did you take to avoid crystallisation?

What is the function of pectin in jam making and when is fruit at its highest level of pectin?

What Occupational Safety and Health points did you consider when producing this recipe? And why is this important?

When preparing and presenting these recipes, what modifications would you make and why? (hint think, ingredient use, nutritional qualities, food processing skills, bench management, time management etc)

Student name \_\_\_\_\_ Date due \_\_\_\_\_

**Tutorial 6: Carbohydrate- Starch and dietary fibre**

**Revision from Tutorial 5:** Carbohydrate is a macro-nutrient made up of carbon, hydrogen and oxygen. It is the result from a process known as photosynthesis in plants. All Carbohydrate foods are from plant sources and plant foods also provide the essential non nutrient-dietary fibre.

Cereals are the edible seeds or grains of grasses and include wheat, rice, maize (cornmeal also known as polenta), rye, barley, oats, millet and buckwheat. Cereals and cereal products are rich sources of carbohydrates. The National Health and Medical Research Council (NHMRC), recommends that 45 to 65% of a person's total daily energy intake (from food and drink) should come from foods rich in carbohydrates. The nutritional value of carbohydrate foods has gained much media attention in recent times, with a strong focus on eating wholegrain varieties. *Why do you think this might be?*

Draw and annotate the structure of a cereal grain.

Explain the nutritional properties of each main component and why these are important for good health. (See p. 44 Nutrition the Inside Story (NTIS))

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**Let's look a little closer....**

For the body to digest (the starch component in cereals) heat and moisture need to be applied. The starch made up of (amylose -short chain granules and amylopectin-long chain granules) and the protein found in cereal grains (such as wheat flour) plays an important function in food preparation. To find out, view the DVD "Chemistry of cooking-What happens inside a sponge cake" and answer the following questions.

Wheat flour contains which two components necessary for cake making?

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Give two reasons for sifting flour and why this is an important process?

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What happens to the flour during cooking?

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As the mixture is heated, \_\_\_\_\_ penetrates and the \_\_\_\_\_ grains swell. They eventually \_\_\_\_\_ and the starch \_\_\_\_\_ to form a gel.

What is gluten and explain its function in cake/bread making?

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## Task One: PART B: Practical 6. Carbohydrates/starches

Functional Properties: Leavening, Gelatinisation, Aeration, Rancidity  
And revision of all properties

COURSE : Dessert Occasional celebration food		NAME OF DISH: sponge cake filled with jam and cream and décor with toffee chards.	No. Portions: 1
			Serving dishes required: Teacups with saucer.
			Garnish/decoration used: Icing sugar and dollop of cream.
Stage	Ingredients and quantity	Method	Equipment
1.	2 eggs  1/3 cup castor sugar  1/3 cup plain flour 1/2 tsp baking powder	29. Pre heat oven to 180C. 30. Lightly grease and flour cake tin.. 31. Whip eggs and sugar until light and pale in colour. 32. Sieve flour and baking powder together and slowly add to egg mixture. 33. Fold in flour carefully to ensure air remains trapped in the cake mixture. 34. Place in oven and bake until golden brown. Approximately 20-25minutes.	
2.	Strawberry jam 150mls Whipping cream  Icing sugar	35. When cake is cool, cut in half and fill with jam and cream and décor as instructed.  36. Serve with icing sugar dusted on top and toffee chards.	

Define the term: *Gelatinisation* and which ingredient does this relate to in this recipe?

How is leavening/ aeration achieved when making this sponge cake? Explain three ways...

What is the role of sugar in this recipe?

When preparing and presenting this recipe, what modifications would you make and why? (hint think, ingredient use, nutritional qualities, food processing skills, bench management, time management etc)

Glue photograph of finished dish here  
and evaluate the sensory quality