



Level 5 Food Technology & Home Economics Unit Fixing Food for Focus

About RPH

Regional Public Health (RPH) is a business unit of the Hutt Valley District Health Board (DHB) providing public health services to the greater Wellington region, including Capital and Coast, Hutt Valley and Wairarapa District Health Boards. Our business is public health action – working to improve the health and wellbeing of our population and to reduce health disparities. We aim to work with others to promote and protect good health, prevent disease, and improve quality of life across the population. We are funded mainly by the Ministry of Health and we also have contracts with the DHBs and other agencies to deliver specific services. We have 150 staff with a diverse range of occupations, including Medical Officers, Public Health Advisors, Health Protection Officers, Public Health Nurses, Analysts and Evaluators.

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Disclaimer

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This unit is designed to support home economics and food technology teachers in guiding students to inquire about the school food environment and how it can be improved through creating or improving existing products in the school canteen. Students are required to consider stakeholder feedback throughout the process to ensure that the final product meets the needs of these stakeholders.

The unit has developed from a project that a Porirua College Y9&10 food technology class completed in 2012 with the support of Regional Public Health and the Heart Foundation. The project was originally inspired by the 'CTV in Schools Project' which was developed and supported by health promoters from Community and Public Health in Christchurch in 2010.

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The resource will be available online in the near future

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Introduction

The School Canteen Project aims to improve the range and nutritional quality of food provided at the school canteen. Food Technology/Home Economics students have the opportunity to either create a new food product or modify an existing product on offer at the school canteen. The unit includes a school-wide survey to determine the needs of the students to assist with the development of healthy, affordable food options.

Prior to the project commencing it is important to gain support from the school canteen. To ensure the canteen is committed to supporting the project it is recommended that a written agreement is signed outlining the expectations of the canteen (see Appendix). It would also be useful to obtain a list of canteen equipment from the canteen manager at this time to ensure student ideas are transferable.

The activity plan is flexible and additional cooking sessions could be introduced throughout to enhance the practical cooking component of the class. It is recommended that if additional cooking sessions are added in, they are relevant to the canteen theme e.g. improving an existing canteen product or making a product that is healthy, affordable and appealing to students.

This project could link with other school departments such as Mathematics, and Health and Physical Education. You may wish to consider cross-curricular links when delivering this unit.

Marketing of the project is important to ensure the whole school is supporting it. Inviting the local newspaper to the tasting day can also help promote the work your school is doing to enhance student wellbeing.

It is important to discuss the project at a staff meeting to seek staff buy-in, as when it comes time to conduct the school-wide survey teachers will need to allocate some class time for this.

This unit will take approximately 6-8 weeks depending on the subject timetable and class needs. Lessons 1 and 2 may be skipped or used as a recap depending on prior knowledge of students. Some activities could also be completed as homework if required.

Learnings gained from this unit have the potential to encourage school-wide changes to the food environment. A school nutrition policy review may be required to effectively bring about change.

Rationale

- School environments are an important setting for promoting healthy eating
- 30% of school-aged children’s daily intakes are consumed at school¹
- 58% of students purchase food from the school canteen²
- School canteens in New Zealand have poor quality foods high in fat, sugar and salt such as hot chips, pies and fizzy drink³
- Students who purchase food from school canteens are significantly more likely to drink soft drinks 5+ times a week, eat meat pies or sausage rolls 3+ times a week, and have chocolate or sweets 4+ times a week²
- Maori and Pacific children are more likely to consume fast food three or more times a week⁴
- 21% of 2-14 year olds are classed as overweight or obese, in which Pacific rates were 2.5 times higher and Maori were 1.5 times higher than the total population. Obesity rates and inequalities in rates increase with age⁵
- 70% of obese adolescents remain obese adults⁶
- Consumption of energy dense foods high in saturated fat, sugar and salt is one of the main factors causing obesity⁷
- Two of every five deaths in New Zealand are linked to nutritional factors⁸
- Nutritional intake has been shown to be associated with school performance, including attendance, behaviour and academic outcomes⁹

¹ Canterbury District Health Board (2009). Evidence supporting the value of the recently repealed NAG clause and evidence on the value of Healthy Eating, Healthy Action (HEHA) type initiatives.

² Utter J, Scragg R, Percival T & Beaglehole R. (2007) School is back in New Zealand – and so is junk food. *New Zealand Medical Journal*; 122.

³ Carter, MA & Swinburn, B. (2004). Measuring the “obesogenic” food environment in New Zealand primary schools. *Health Promotion International*; 19: 15-20.

⁴ Parnell W, Scragg R, Wilson N, Schaaf D, Fitzgerald E (2003). *NZ Food NZ Children: Key results of the 2002 National Children's Nutrition Survey*. Wellington, New Zealand: Ministry of Health. URL: <http://www.moh.govt.nz/moh.nsf/49ba80c00757b8804c256673001d47d0/03258bbdfc0359e2cc2566dd60002e14e?OpenDocument>

⁵ Ministry of Health (2008). *A Portrait of Health: key results of the 2006/07 New Zealand Health Survey*. Wellington: Ministry of Health. Available from: [http://www.moh.govt.nz/moh.nsf/pagesmh/7601/\\$File/portrait-of-health-june08.pdf](http://www.moh.govt.nz/moh.nsf/pagesmh/7601/$File/portrait-of-health-june08.pdf)

⁶ Nicklas TA, T. B, K.W. C, G. B: Eating Patterns, Dietary Quality and Obesity. *Journal of the American College of Nutrition* 2001, 20:599-608. [PubMed Abstract](#)

⁷ Dehghan M, Akhtar-Danesh N & Merchant, A (2005). Childhood obesity, prevalence and prevention. *Nutrition Journal*; 4:24

⁸ Ministry of Health (2003). *Healthy eating—healthy action: a strategic framework*. Wellington, New Zealand: Ministry of Health.

⁹ Quigley and Watts (2005). *A rapid review of the literature on the association between nutrition and school pupil performance*, Wellington.

- Fast-food outlets are more dense in high deprivation areas and have been increasing while healthy food outlets and fresh produce have been declining, making access to healthy food an increasing barrier¹⁰

In 2008 the National Administration Guideline 5 (NAG 5) was changed to include 'promote healthy food and nutrition to all students' and 'where food and beverages are sold on school premises, make only healthy options available'.

The National Administration Guideline (NAG) 5 change led to almost all schools making changes to meet the new guideline, showing that schools have the ability to create a healthy environment if required.

This unit is designed to give students the opportunity to make a difference to their school environment, by creating food products to help improve the nutritional quality and appeal of food in the school canteen.

¹⁰ Ministry of Health (2012). Food and Nutrition Guidelines for Healthy Children and Young People (Aged 2–18 years): A background paper.

Curriculum links

This unit aligns with the following learning areas of the NZ curriculum:

Level 5: Health and Physical Education

Healthy communities and environments

- **People and the environment (D4):** Investigate and evaluate aspects of the school environment that affect people's well-being and take action to enhance these aspects.

Personal Health and Physical Development

- **Personal Growth and Development (A1):** Describe physical, social, emotional, and intellectual processes of growth and relate these to features of adolescent development and effective self-management strategies.
- **Safety Management (A3):** Investigate and practice safety procedures and strategies to manage risk situations.

Level 5: Technology

Technological Practice

- **Brief Development (A2):** Justify the nature of an intended outcome in relation to the need or opportunity. Describe specifications that reflect key stakeholder feedback and that will inform the development of an outcome and its evaluation.
- **Outcome development and evaluation (A3):** Analyse their own and others' outcomes to inform the development of ideas for feasible outcomes. Undertake ongoing functional modelling and evaluation that takes account of key stakeholder feedback and trialling in the physical and social environments. Use the information gained to select and develop the outcome that best addresses the specifications. Evaluate the final outcome's fitness for purpose against the brief.

Technological Knowledge

- **Technological Modelling (B1):** Understanding how evidence, reasoning, and decision making in functional modelling contribute to the development of design concepts and how prototyping can be used to justify ongoing refinement of outcomes.
- **Technological Products (B2):** Understand how materials are selected, based on desired performance criteria.

Key Competencies¹¹

There will be many opportunities to develop key competencies as you work through this unit. Some examples are:

- Thinking e.g. planning, reflecting, problem solving, cooking skills
- Managing self e.g. time management, utilising available resources study skills, information skills
- Participating and contributing e.g. actively contributing to group work and class discussions
- Relating to others e.g. considering opinions of key stakeholders, sharing ideas, active listening, recognising different view points and negotiating, social and cooperative skills, communication
- Using language, symbols and texts e.g. collecting, interpreting and graphing survey data, numeracy skills

¹¹ <http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies>

Unit plan overview: Fixing food for focus – Level 5

Purpose: To engage students in exploring and developing			
Curriculum Level 5			
Curriculum Areas		Achievement Objectives	Specific Learning Outcomes. Students will be able to:
Health and Physical Education	Home Economics	<p>Healthy Communities and Environments People and the environment (D4)</p> <p>Personal Health and Physical Development Personal growth and development (A1) Safety management (A3)</p>	<ul style="list-style-type: none"> Assess and describe the quality of current school canteen food Demonstrate an understanding of good nutrition and apply knowledge to create a food item for the school canteen Improve the nutritional quality of a product by modifying an existing recipe Plan and conduct a survey to investigate student perspectives and needs in relation to the school food environment Collate, analyse and apply the survey results to the development of a food item for the school canteen that meets the needs of students Present their product idea to the school canteen manager and make changes to their product based on the feedback provided Calculate quantity and cost of a single serve as well as a bulk recipe Demonstrate food safety practices at all times Develop a marketing strategy to promote the whole school tasting event
	Food Technology	<p>Technological Practice Brief Development (A2) Outcome development and evaluation (A3)</p> <p>Technological Knowledge Technological modelling (B1) Technological products (B2)</p>	

Activity Outline

Activity	Activity title	Strands/Achievement Objectives	Specific Learning Outcomes. Students will be able to:
1	Hauora	<ul style="list-style-type: none"> Personal growth and development People and the environment 	<ul style="list-style-type: none"> Describe how the food we eat impacts on wellbeing using the Te Whare Tapa Wha model Understand why healthy eating is important for Hauora
2	Nutrition concepts	<ul style="list-style-type: none"> Personal growth and development 	<ul style="list-style-type: none"> Describe the four food groups and recommended number of servings per day for teenagers Identify and define nutrients Read and understand a nutrition information panel to determine the nutritional quality of a food product
3	Project introduction Introducing current canteen food	<ul style="list-style-type: none"> Brief development Technological products 	<ul style="list-style-type: none"> Successfully describe the canteen project Assess and describe the quality of several of the current school canteen menu items
4	Planning a healthy canteen product	<ul style="list-style-type: none"> Brief development Planning for practice Technological products 	<ul style="list-style-type: none"> Select one basic food product and improve the nutritional quality by adding fruit or vegetables Identify ingredients and quantities required
5	Cooking a healthy canteen product	<ul style="list-style-type: none"> Brief development Technological products Safety management 	<ul style="list-style-type: none"> Successfully modify an existing recipe to include added fruit or vegetables Plan, prepare and execute cooking of a food product

6	Developing a whole-school survey	<ul style="list-style-type: none"> • People and the environment 	<ul style="list-style-type: none"> • Demonstrate the ability to work together to create a school-wide survey • Demonstrate written communication skills • Consider who the survey respondents are and target the survey appropriately • Explain the purpose and intention of the survey
7	Collating survey results	<ul style="list-style-type: none"> • People and the environment 	<ul style="list-style-type: none"> • Collate and interpret survey results • Discuss and graph key findings
8	Brainstorming product	<ul style="list-style-type: none"> • Planning for practice • Brief development • Technological modelling 	<ul style="list-style-type: none"> • Use prior knowledge and collated survey results to determine at least one food product idea that could be sold in school canteen
9	Nutritional content of product	<ul style="list-style-type: none"> • Technological modelling 	<ul style="list-style-type: none"> • Consider nutrition guidelines, food safety and the marking schedule throughout the product planning stages • Prepare questions for canteen manager to help guide product development
10	Visiting school canteen	<ul style="list-style-type: none"> • Technological modelling • People and the environment 	<ul style="list-style-type: none"> • Consider the challenges school canteens face regarding finances, equipment and time
11	Adapting final product and calculating ingredients, quantities, costing	<ul style="list-style-type: none"> • Brief development • Outcome development and evaluation 	<ul style="list-style-type: none"> • Make improvements to food product based on feedback received from canteen manager • Produce an accurate recipe for chosen food product • Calculate quantities of ingredients required • Calculate price of ingredients required
12	Cooking product and identifying where changes need to be made	<ul style="list-style-type: none"> • Technological modelling • Outcome development and evaluation • Safety management 	<ul style="list-style-type: none"> • Follow recipe and create food product • Identify any further modifications required • Create an evaluation form for tasting day

13	Taste testing	<ul style="list-style-type: none"> • Outcome development and evaluation • Safety management 	<ul style="list-style-type: none"> • Work collaboratively in a team situation • Prepare food for tasting and present a sample serving • Seek feedback from fellow students and staff via evaluation form
14	Results collated	<ul style="list-style-type: none"> • Outcome development and evaluation 	<ul style="list-style-type: none"> • Successfully compile evaluation forms from tasting day to determine a winner
15	Recipes written up and made into a recipe book	<ul style="list-style-type: none"> • Outcome development and evaluation 	<ul style="list-style-type: none"> • Work collaboratively in their groups to create a one-page recipe of their product including a photo to contribute to the class recipe book

Connecting Hauora and Healthy Eating

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 1
Learning Intentions To understand why healthy eating is important and how it affects well-being.	Success criteria Students can describe how healthy eating impacts on well-being using the Te Whare Tapa Wha model.
Lesson Outline Have the students work in two groups to brainstorm what 'healthy eating' looks like, and why 'healthy eating' is important. Ask the groups to feed back to the whole class, and then explain that this activity is an important starting point to exploring Hauora. <i>N.B. This is to understand the students' level of knowledge around nutrition. Activity two will cover nutrition concepts.</i> Introduce the students to the concept of Hauora and the four dimensions: Taha tinana: physical wellbeing, Taha hinengaro: emotional/mental wellbeing, Taha wairua: spiritual wellbeing, Taha whanau: social wellbeing. Ask the students to review their 'healthy eating' brainstorms and see whether they included all four areas of Hauora. If some areas were lacking, ask the groups to think of some more examples. Once they have an understanding of Hauora students can then link this to healthy eating by completing the 'Impact on health and wellbeing' resource.	
Supporting Resources http://health.tki.org.nz/Key-collections/Curriculum-implementation/Underlying-concepts/Dimensions-of-hauora http://hps.tki.org.nz/Resources/Teacher-unit-plans/Healthy-Eating-Level-5 Resource 9: Impact on Health and Wellbeing	

Nutrition Concepts

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 2
Learning Intentions To learn basic nutrition concepts including the four food groups, nutrition needs for teenagers, macro and micronutrients and introduce label reading.	Success criteria Students can describe the four food groups, number of servings per day they need, outline macro and micronutrients and can read a nutrition information panel.
<p>(You will need to collect a range of muesli bar or breakfast cereal boxes for an activity in this lesson). <i>N.B. This lesson may not be required, depending on the student's current level of nutrition knowledge.</i></p>	
Lesson Outline Four Food Groups: Provide each student with the pamphlet "Healthy Eating for Young People aged 13-18yrs" and allow five minutes to skim read <ul style="list-style-type: none"> • Ask students to name each of the food groups (Fruit and Vegetables; Milk and Milk Products; Bread and Cereals; Lean meats, chicken, fish, eggs, nuts, seeds, legumes, lentils and tofu). • Discuss how many servings of each food group teenagers need per day and why. • Ask students to conduct a 24 hour dietary recall and record all foods and drinks consumed over the previous 24 hours. Each student individually reflects on whether their diet meets the MoH recommendations. • Students brainstorm in pairs what are the things that make it easy (enablers) and difficult (barriers) for teenagers to eat healthy food? 	

Micronutrients: Iron, Calcium

Discuss the following

- What is a micronutrient?
- Iron and Calcium: Why are they important and what foods are high in these micronutrients?

Explain to the students what 5+ a day means

Why should we aim to eat a rainbow of coloured fruit and vegetables every day?

NIP - Label reading

Provide each student (or one between two) with a muesli bar or breakfast cereal box. Explain when reading labels, we always use the per 100g/100ml column to compare similar products as serving sizes can differ.

Ask students to read and compare their nutrition information panel with another student, focusing on energy, fat total, sugars, dietary fibre and sodium.

Explain or remind about the label reading guidelines, aiming for less than 10g fat/100g, less than 10g sugar/100g (less than 20g/100g if products contains fruit), more than 5g fibre/100g and less than 400mg of sodium per 100g.

Assess and record whether their product meets the recommended guidelines.

Supporting Resources

Healthy Eating for Young People (from 13 to 18 years old): Ministry of Health

<https://www.healthed.govt.nz/resource/healthy-eating-young-people>

Label Reading Guidelines (Appendix 1)

<http://www.heartfoundation.org.nz/healthy-living/healthy-eating/shopping-tips/how-to-read-food-labels>

Project Introduction

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 3
<p>Learning Intentions</p> <p>To introduce the project and review and discuss food items currently available in the school canteen.</p>	<p>Success criteria</p> <p>Students can describe what the project is about and critically analyse food items currently available in the school canteen.</p>
<p>Lesson Outline</p> <p><i>Part 1</i></p> <ul style="list-style-type: none"> • Split students into project groups • Explain the project • Provide each group with a marking schedule and Ministry of Health Nutrition Guidelines • Get groups to come up with a name for the project and then vote as a class on the best name <p><i>Part 2</i></p> <ul style="list-style-type: none"> • Each group is then to be given an item from the school canteen and required to complete the question template provided • Each group is allocated a question and creates a graph to present the information e.g. percentage healthy verses unhealthy food items 	
<p>Supporting Resources</p> <p>Project Outline (Appendix 2)</p> <p>Marking Schedule (Appendix 3)</p> <p>Question Template 'Canteen Food Assessment' (Appendix 4)</p> <p>MoH Nutrition Guidelines: http://www.health.govt.nz/publication/food-and-nutrition-guidelines-healthy-children-and-young-people-aged-2-18-years-background-paper</p> <p>Nutritional content template</p>	

Planning a healthy canteen product

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 4
Learning Intentions To understand how to enhance the nutritional quality of a product.	Success criteria Students are able to improve the nutritional quality of a product by adding appropriate fruit or vegetables to the existing recipe.
Lesson Outline Students choose a basic food product suitable for their school canteen to make. Students can use the internet, magazines and recipe books to select a recipe or bring a favourite recipe from home. The chosen food product must contain at least one fruit or one vegetable. <i>Considerations</i> <ul style="list-style-type: none"> • Seasonal variety of fruit and vegetables • Cost of food to make • Cost to consumer • Four food groups, nutritional quality of product • Healthy eating guidelines from previous activity Within their groups, ask the students to decide on one food product and develop a list of the ingredients and quantities they will need to make their product. There needs to be enough ingredients to make one serving for each group member. <i>* The teacher will need to purchase ingredients for next lesson based on the recipes handed in</i>	
Supporting Resources http://www.workandincome.govt.nz/documents/brochures/the-great-little-cookbook.pdf http://www.familyservices.govt.nz/documents/my-family/cmdhbc-cookbook-june09-.pdf http://www.healthyfood.co.nz/recipes http://www.heartfoundation.org.nz/healthy-living/healthy-recipes	

Cooking a healthy canteen product

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 5
Learning Intentions To successfully create a healthy canteen product through recipe modification.	Success criteria Students can improve the nutritional quality of a recipe and critically compare with a similar product.
Lesson Outline <i>Preparation: Buy ingredients for students to cook with</i> <ol style="list-style-type: none"> Each group makes the product with their chosen fruit/vegetables Using the discussion template, students rate their own food product Each group needs to try at least one other group's product, recording this in the second column of the discussion template 	
Supporting Resources Recipe Modifications http://www.heartfoundation.org.nz/programmes-resources/food-industry-and-hospitality/Hospitality-Hub/recipe-modification/catering-recipe-makeovers Discussion Template (Appendix 5)	

Whole-School Survey Development

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 6
Learning Intentions To create a school-wide survey about the school food environment.	Success criteria Students successfully develop a survey to capture student opinions about the school food environment and canteen food products.
<p>Lesson Outline</p> <p><i>Preparation: Randomly select 1-2 classes from each year level and ensure teachers are aware of the survey that is required to be completed by all students in their class. The sample group must reflect the school community (see questions below). The time it takes to collate the results will depend on the number of survey responses. It is recommended that your sample represents approximately 20% of your school roll.</i></p> <ol style="list-style-type: none"> 1. Brainstorm as a class the aim of the survey and what it intends to find out 2. Students individually write a list of considerations that need to be made to ensure the sample size reflects the school community e.g. age, ethnicity etc. 3. Discuss any cultural considerations based on the school's ethnic makeup 4. In groups, come up with 3-5 questions students would like to ask the school, based on the brainstorm 5. Combine each group's ideas to come up with the final survey <p><i>N.B. Need to think about creating a questionnaire/survey that is easy to complete and simple to collate results. You may choose to use Survey Monkey to simplify the process.</i></p> <p><i>* Teachers will need to type up and print the survey and distribute it to all relevant classroom teachers.</i></p>	
<p>Supporting Resources</p> <p>http://hps.tki.org.nz/Resources/Teacher-unit-plans/Healthy-Eating-Level-4:</p> <p>Big picture survey questions</p> <p>Example Questionnaire - For Teachers Reference Only (Appendix 6)</p>	

Collation of Survey Results

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 7
Learning Intentions To collate and present the survey results.	Success criteria Students are able to collate survey results and discuss key findings.
<p><i>N.B. If Survey Monkey was used results will be collated automatically.</i></p> <p>Lesson Outline</p> <ol style="list-style-type: none"> 1. Divide completed surveys up between all students to collate and record results on a results sheet 2. In their groups combine the results and then collate as a class 3. Discuss results as a class 4. For homework: each student is allocated a question and required to put the results into a graph 	
<p>Supporting Resources</p> <p>http://hps.tki.org.nz/Resources/Teacher-unit-plans/Healthy-Eating-Level-4:</p> <p>Big picture survey collation of survey results</p>	

Brainstorming Product

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 8
Learning Intentions To brainstorm product ideas which meet the marking criteria, nutrition guidelines and needs from the survey results.	Success criteria Students take into account survey results and use a range of resources to come up with at least one product idea that could be sold in the school canteen.
Lesson Outline <ol style="list-style-type: none"> 1. Provide each group with a copy of the survey results 2. Students use a range of resources e.g. internet, magazines, recipe books, to help them come up with some product ideas. Cut out pictures or draw product ideas onto sheets of A3 paper 3. Students must consider the following when coming up with product ideas: <ul style="list-style-type: none"> • Survey results • Nutrition guidelines for teenagers (check using label reading, nutritional consideration worksheet and food composition tables or NIP calculator) • Marking schedule • Canteen equipment available (collected from canteen prior to unit) 4. Reflect back on lesson 5 food comparisons. Is there useful feedback that needs to be considered? <p><i>N.B. Contact Canteen Manager to arrange class visit in two lessons' time.</i></p>	
Supporting Resources Survey results MOH Nutrition guidelines for teenagers Heart Foundation's Ingredients and Healthier Alternatives http://www.heartfoundation.org.nz/uploads/Ingredients_and_Healthier_Alternatives1.pdf Nutritional considerations example and worksheet (appendix 8a & 8b) and Food Composition Tables Marking Schedule Magazines/recipe books/internet http://www.workandincome.govt.nz/documents/brochures/the-great-little-cookbook.pdf http://www.familyservices.govt.nz/documents/my-family/cmdhb-cookbook-june09-.pdf http://www.healthyfood.co.nz/recipes	

<http://www.heartfoundation.org.nz/healthy-living/healthy-recipes>

Food Composition Tables: <http://www.foodcomposition.co.nz/concise-tables> (*Teacher will need to register to be able to access this*)

Nutrition Panel Calculator: <http://www.foodstandards.gov.au/industry/npc/Pages/default.aspx>

Product Considerations

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 9
<p>Learning Intentions</p> <p>Each group has decided on a product that meets both the nutritional guidelines and the needs of students.</p> <p>Students develop questions about their product to ask the canteen manager.</p>	<p>Success criteria</p> <p>Students can demonstrate how their product meets both the nutritional guidelines and the needs of students.</p> <p>Groups have prepared 3-4 questions to ask canteen manager</p>
<p>Lesson Outline</p> <ol style="list-style-type: none"> 1. Groups need to decide on the final product they want to make 2. Groups must ensure that their product is low in fat, sugar and sodium and has adequate amounts of fibre <ul style="list-style-type: none"> • Reminder: The nutrition guidelines per 100g (< 10g Fat, < 10g Sugar (<20g with fruit), > 5g Fibre, < 400mg Sodium) • The needs of students (survey results) 3. Groups should also consider the marking schedule 4. Once finalised, groups need to prepare 3-4 questions to ask the canteen manager about their product to ensure that it is viable to make in the school canteen 5. Homework: Students are required to research food safety practices and write a list of considerations for this project based on their findings <p><i>Considerations</i></p> <ul style="list-style-type: none"> • How a canteen runs • Profitability • Equipment • Space • Surveying area • Product placement • Appeal • How to prepare food in bulk 	
<p>Supporting Resources</p> <p>Food Safety - http://www.foodsmart.govt.nz/elibrary/consumer/food-safety-in-the-home.pdf</p>	

http://www.foodsmart.govt.nz/elibrary/consumer/food_safety_tips_selling.pdf

<http://www.foodsafety.govt.nz/industry/general/haccp/>

Food Composition Tables: <http://www.foodcomposition.co.nz/concise-tables>

(Teacher will need to register to be able to access this)

Nutrition Panel Calculator: <http://www.foodstandards.gov.au/industry/npc/Pages/default.aspx>

School Canteen Visit

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 10
Learning Intentions Students visit the school canteen and present their product to the school canteen manager for feedback on practicality.	Success criteria Students can confidently ask the canteen manager questions about their product and take on board any feedback provided.
Lesson Outline <ol style="list-style-type: none">1. Students visit the canteen and each group will get the opportunity to ask questions and present their product ideas to the canteen manager for feedback2. Groups will discuss and, where necessary, make changes to their product based on feedback from the canteen manager3. Discuss marketing ideas building up to the tasting day	
Supporting Resources School Canteen Marketing Resource http://www.heartfoundation.org.nz/uploads/Canteen%20promotion%20and%20marketing(1).pdf	

Finalising Product and Calculating Quantities and Costing

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 11
<p>Learning Intentions</p> <p>Students finalise their product and write up a list of ingredients with quantities and costing.</p>	<p>Success criteria</p> <p>Students are able to make changes to their product where necessary to meet the needs of the canteen.</p> <p>Students are able to calculate quantities and pricing of their product.</p>
<p>Lesson Outline</p> <ol style="list-style-type: none"> 1. Students consider whether they need to modify or change their product based on feedback from canteen manager 2. Students write up a list of ingredients 3. Students work out the quantities and costing for a single serving and when making it in bulk (enough for 50 small individual tastings) 4. Lists are checked by teacher and used for purchasing ingredients and serving cups/plates for next lesson <p><i>If time allows:</i></p> <ul style="list-style-type: none"> * Work on marketing and preparation for tasting day e.g. tasting questions, posters etc. * Pitch an article using persuasive writing and contact local newspaper to come to tasting day! 	
<p>Supporting Resources</p> <p>Quantity calculating Sheet (Appendix 9)</p>	

Cooking Product and Identifying Modifications

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 12
Learning Intentions Students will create their final food product and gain feedback from others in the class.	Success criteria Students are able to create their product and identify modifications that need to be made to improve it.
Lesson Outline <ol style="list-style-type: none"> 1. In their groups, students collect their ingredients and equipment for their cooking area 2. Students follow their recipe and make their product 3. Students sample it within their group and write down comments - positive and negative 4. Each group has at least one other group taste their product and provide feedback using the template from activity 6 <p style="text-align: center;">-----</p> <ol style="list-style-type: none"> 5. As a group, students discuss feedback and identify changes that need to be made to their product 6. Final ingredient lists, quantities, costing and tasting day equipment lists are completed and given to teacher in preparation for school-wide tasting day. Consider sustainability with tasting containers/packaging 7. Produce an evaluation form for tasting day <p><i>N.B.</i></p> <ul style="list-style-type: none"> * <i>If there are time restraints the lesson can be split in two (see dotted line)</i> * <i>The next lesson needs to lead into morning tea or lunch time. If it does not students may require time out of class prepare food for tasting</i> * <i>Students may wish to dress as chefs to look professional on tasting day</i> * <i>Ingredients and serving equipment must be purchased prior to the next activity</i> 	
Supporting Resources Discussion template from activity 6 (Appendix 6)	


School-wide Tasting Day

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 13
<p>Learning Intentions</p> <p>Students will make their product, prepare it in tasting containers and set up a tasting station in school.</p>	<p>Success criteria</p> <p>Students are able to prepare their product in bulk, set up a tasting station and gain feedback from the wider school on their product.</p>
<p>Lesson Outline</p> <ol style="list-style-type: none"> 1. Each group makes their product in bulk, enough for 50 small individual tastings 2. Each group must have one full serving size displayed to show students what they would get when they purchase it from the school canteen. A photo must be taken of each full serving size to be used for the recipe book 3. The class sets up a tasting station in the school (e.g. hall or outdoor area) with signs indicating the name and cost of their product 4. Each group prepares their product for serving in tasting containers 5. Products are tasted by students and staff 6. Evaluation forms are set up to ensure each student votes on their favourite product <p><i>N.B. This lesson needs to lead into morning tea or lunch time. If it does not, students may require time out of class prepare food for tasting</i></p>	
<p>Supporting Resources</p> <p>Example evaluation form (Appendix 7)</p>	

Final Results

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 14
Learning Intentions Students collate the results from tasting day.	Success criteria Results are collated and the winning team is identified.
Lesson Outline <ol style="list-style-type: none">1. Divide the tasting day evaluations up between each group to collate results2. All group's results are combined to identify the winning group and product3. Students complete an evaluation of the project	
Supporting Resources Example evaluation form (Appendix 10)	

Class Recipe Book

Subject: Food Technology/Home Economics	Year level: Y10
Unit: Fixing Food for Focus	Activity Number: 15
Learning Intentions To create a recipe book for the canteen with the final products from each group.	Success criteria Students are able to work effectively in groups to create a page about their product to go into a class recipe book.
Lesson Outline <ol style="list-style-type: none"> 1. Students work in their groups to create a page for the recipe book which includes their recipe, instructions, costing and a photo 2. Winning recipe to be placed on front page with a gold ribbon symbol  <ol style="list-style-type: none"> 3. Discuss ideas for the launch of the winning product in the school canteen at the start of next term 	
Bringing about Change <ol style="list-style-type: none"> 1. Discuss with students what they would like to see happen with their recipes and survey findings 2. Are there any students interested in continuing to advocate for improvements to the school food environment outside of class? 	
Supporting Resources	

Bringing About Change

The school-wide survey may show quality data that could be used outside of this class to advocate for change. Below are some examples of ways that the results could be utilised in the future:

- Present results to the BOT (include student representatives in this process)
- Student representatives discuss results and recipe ideas with the school canteen
- School student council provided with the results to support their work

Appendix

Appendix 1: Label Reading Guidelines

The label reading guidelines below can be used to assist students to identify healthier products. These are general label reading guidelines across all food and beverage categories. Please be aware that different products will have varied nutrient profiles due to the nature of the food composition. For example, breakfast cereals containing dried fruit will have higher sugar content, so aim for less than 20g of sugar/100g in this instance.

Nutrient	Qty Per 100g
Fat - total	Less than 10g
Sugars	Less than 10g Less than 20g if product contains fruit
Sodium (salt)	Less than 400mg
Dietary Fibre	More than 5g

Appendix 2: Project Outline

The overall goal of the unit is to create a new food product or modify an existing product on offer at the school canteen to improve the nutritional quality and appeal of school canteen food for the whole school.

For this unit you will be required to:

- Understand and apply basic nutrition concepts
- Conduct and analyse a school-wide survey
- Create or modify a product for the school canteen
- Adapt your product based on stakeholder feedback
- Create a marketing strategy for product tasting day
- Provide a 1-2 page recipe of your food item to contribute to a class recipe book

Ideally, the winning food product will end up being sold in the school canteen.

Appendix 3: Marking Schedule

Nutritionally balanced and meets Food and Nutrition Guidelines for Teenagers	5 marks
Preparation and cooking methods are practical for the school canteen environment	4 marks
Consideration of survey results is evident to ensure the product appeals to a wide range of students	4 marks
Product presentation and portion size	2 marks
The product is affordable for students based on survey results	3 marks
Product pricing ensures the school canteen will make a fair profit	3 marks
Demonstrate safe food handling	2 marks
Clear marketing strategy	2 marks
Total	25 marks

Appendix 4: Canteen Food Assessment

Food Item: _____				
Does the food item look appealing from the outside?				
1	2	3	4	5
Not at all		Somewhat		Yes, Definitely
Comment:				
Does the food item look appealing on the inside?				
1	2	3	4	5
Not at all		Somewhat		Yes, Definitely
Comment:				
Do you think the food item is healthy or unhealthy? Explain				
Healthy		Unhealthy		
Explain:				
Do you think the food item is priced fairly?				
Yes		No		
Comment:				
Overall, how would you rate this product?				
1	2	3	4	5
Poor		Average		Excellent
Comment:				

Appendix 5: Cooking a healthy canteen product

Rate each category using the following scale:

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

Not At All It's Ok Yes Definitely

Food Item # 1: _____	Food Item # 2: _____
<p>Does the food item look appealing?</p> <p>Rating:</p> <p>Explanation:</p>	<p>Does the food item look appealing?</p> <p>Rating:</p> <p>Explanation:</p>
<p>Does the food item taste good?</p> <p>Rating:</p> <p>Explanation:</p>	<p>Does the food item taste good?</p> <p>Rating:</p> <p>Explanation:</p>
<p>Do the vegetables go well in the food item?</p> <p>Rating:</p> <p>Explanation:</p>	<p>Do the vegetables go well in the food item?</p> <p>Rating:</p> <p>Explanation:</p>
<p>Would you buy this food item if it was in the school canteen?</p> <p>Rating:</p> <p>Explanation:</p>	<p>Would you buy this food item if it was in the school canteen?</p> <p>Rating:</p> <p>Explanation:</p>
<p>Overall Score = (Add each section together / 4)</p>	<p>Overall Score = (Add each section together / 4)</p>

Appendix 6: Porirua College Student Survey Example



Project Yum Yum Survey 2012



Our Yr9/10 Food Technology class is currently doing a project on the school canteen. To ensure it is successful, it is important that the whole school has an opportunity to provide feedback and ideas. Please be honest when answering the following questions as this is an opportunity for students to make a difference to the food environment at Porirua College (PC).

PC's School Canteen:

1. On average, how often do you buy food from the canteen? (please circle)

┆ Never ┆ 1-2/wk ┆ 3-4/wk ┆ Every day

2. Tick the box that describes why you buy food from the canteen

┆ Tastes good

┆ Cost

┆ Easier than making it

┆ Fills me up

3. What prevents you from buying food at the canteen?

┆ Price Lack of variety Quality Environment

4. Describe the quality of the food currently available at the canteen

┆ Poor Average Good Excellent

5. Is the food currently available in the canteen affordable?

┆ Yes No Some items

6. Is the healthy food affordable?

┆ Yes ┆ No Some items

The canteen is looking to introduce a new product...

7. How much would you be prepared to pay for one lunch item in the canteen?

┆ \$2-3 ┆ \$3-4 ┆ \$5+

8. Would you like to see healthier food options available?

┆ Yes ┆ No ┆ Some items

9. What type of food would you prefer?

- Hot e.g. toasted sandwich/chop suey
- Cold e.g. bread roll, sushi, wrap
- Vegetarian
- Cultural
- Spicy
- Sweet
- Savoury

10. Would you prefer something easy to eat?

Yes No Doesn't matter

11. Would you like to see the canteen have a makeover?

Yes No Doesn't matter

12. If you have any suggestions for healthy foods you would like to buy in the canteen please list below:

→ _____

→ _____

Thank you for taking the time to fill out this survey 😊

Appendix 7: Taste Testing Questionnaire Example

Group 1

Does this product taste good?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product good value for money?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product healthy/nutritious?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Would you buy it?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Does it look appealing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is there anything you would change about it?	_____		
Give the product an overall rating:	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10		
	Not good	Average	Excellent

Group 1

Does this product taste good?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product good value for money?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product healthy/nutritious?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Would you buy it?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Does it look appealing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is there anything you would change about it?	_____		
Give the product an overall rating:	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10		
	Not good	Average	Excellent

Group 1

Does this product taste good?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product good value for money?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is the product healthy/nutritious?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Would you buy it?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Does it look appealing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> It's ok
Is there anything you would change about it?	_____		
Give the product an overall rating:	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10		
	Not good	Average	Excellent

Appendix 8a: Nutritional Considerations Worksheet – EXAMPLE ONLY

Chicken Chop Suey

L = Low

M = Medium

H = High

? = Unsure

Ingredients	Fat (<10g/100g)				Sugar (<10g/100g, <20g with fruit)				Salt (<400mg/100g)				Fibre (> 5g/100g)			
	L	M	H	?	L	M	H	?	L	M	H	?	L	M	H	?
Skinless chicken breast		*			*				*				*			
Vermicelli noodles	*				*				*				*			
Carrots	*				*				*						*	
Broccoli	*				*				*						*	
Onion	*				*				*						*	
Garlic	*				*				*						*	
Soy Sauce	*				*						*		*			
Chinese Five Spice	*				*				*				*			

Appendix 9: Quantity Calculating & Purchasing Plan

1. Costing recipes

Check that each recipe uses the correct quantities/number of serves. Fully cost out each recipe (only for the quantity being served).

Name of recipe	Food / ingredient	Quantity used in recipe (g or ml)	Unit size (quantity purchased)	Unit cost (Cost of item purchased)	Quantity required ÷ Quantity purchased x cost of unit = cost of item	Changes
Example: Macaroni cheese	Macaroni elbows	250	500g	\$2.95	\$1.48	
Total cost of food items						

Cost out all miscellaneous items e.g. napkins, invitations etc.						
Name of recipe	Food / ingredient	Quantity used in recipe (g or ml)	Unit size (quantity purchased)	Unit cost (Cost of item purchased)	Quantity required ÷ Quantity purchased x cost of unit = cost of item	Changes
Example: Macaroni cheese	Macaroni elbows	250	500g	\$2.95	\$1.48	
Total cost of food items and miscellaneous items						

2. Balance the Budget

Add up your total costs.

Total cost: \$ _____ **Budget Limit:** \$ _____

You must balance the budget before you move on to the next stage in your planning.

Explain what changes you will make to balance the budget plan above.

Adjusted total cost for all food and miscellaneous items: \$ _____

Appendix 10: Project Evaluation Example

Project Yum Yum Evaluation 2012

How would you rate the project overall?

1	2	3	4	5
Poor		Average		Excellent

What did you enjoy the most about the project?

What did you find the least enjoyable aspect of the project?

Is there anything that could be changed/ improved to make the project more effective?

Yes No Not sure

If yes please comment:

Name one thing you learnt as a result of the project?

Thank you 😊