

CURRICULUM LINKS

BIKKIE TIME: Updating an existing unit of work to align with *The New Zealand Curriculum (2007)*

In these Curriculum Links pages, Diana Eagle revisits the Bikkie Time unit and develops a unit plan to align with The New Zealand Curriculum (2007), which she then annotates showing these links and comments on the process.

Background to original unit - Big Bikkies

This unit of work was first developed and used in 2003. The unit was never fully planned out into a formally written unit at any time. The basis of the unit was planned around an article about “Cookie Time” resourced from the *North and South* magazine. As the unit was underway the opportunity came up for the class to provide a food stall at “Spring Fever Week” – at that time, a new event in the school calendar.

Teacher experience

The teacher was new to teaching context specific Food Technology and the new NCEA achievement standards at Level One were being introduced that year. There was the opportunity to deliver this unit, due to assistance given by a consulting food technologist who was contracted to work on an NCEA trial unit with Year 12 (a Sixth Form Certificate class). The consultant was there to provide knowledge and skills to the teacher as much as the students.

Unit Aim

The aim of this unit was to give the Year 10 students shared experiences and understandings around what needs to be considered in the development of a biscuit outcome for multi-unit batch production as compared to just cooking a batch of biscuits. Students were exposed to new terminology in relation to production processes and quality control checks.

Teaching and learning focuses were:

- To develop skills in biscuit making.
- To develop skills in product analysis.
- To develop testing methods necessary to ensure quality assurance in biscuit making.

- To develop a production process suited to the class environment.
- To use case study material to inform and enhance technological practice.

To do this work as a unit with the whole class rather than individual projects was intentional, not only for management of resources and time, but also to ensure learning was for all students so that each felt involved in the process. As a group they made key decisions together, developing and evaluating the final outcome as a class. The practical tasks were carried out in groups of 3-4 and/or in pairs with the final multi-unit batch production a class effort.

At the end of this unit students were able to market and sell a big cookie product in the school environment although there was unexpected competition from the cafe manager, who lowered the price on the Cookie Time Big Cookie. For this project the class won the Trans Power Neighbourhood Engineers' Award in 2003.

Although this unit of work was never delivered again at this school the unit of work gave the teacher the much needed experience and confidence in delivering a technology programme with a focus on food production and processes. From this unit the teacher was able to make significant changes to the teaching programme at all levels over the next five years and develop a variety of resources to scaffold student learning.

The unit was case studied by Techlink to become one of the first case studies in the area of food. The unit sequence shown in this original case study was compiled from a reflective commentary of the learning activities rather a pre-determined written unit plan.

For more information on the original unit of work, see www.techlink.org.nz/Case-studies/Classroom-practice/archive/big-bikkie/index.htm

Updating the unit

With the availability of a new Technological Practice resource on Techlink called “Gluten Free cookies” there was an opportunity to update the existing Classroom Practice case study. This resource is based around the case study of the development of the new gluten free cookie developed by the “Cookie Time” company – it has been used within the updated unit of work as the main example of outside technological practice. This case study clearly aligns with all 3 Technology Strands.

For more information on this resource, see www.techlink.org.nz/Case-studies/Technological-practice/Food-and-Biological/Gluten-free-cookies/index.htm

The original Techlink unit was selected for use as a PPTA resource to reflect how the “front end” of the 2007 New Zealand Curriculum could align to an existing unit. This developed resource demonstrates the teacher’s reflective thinking around how it already aligns with the new curriculum in relation to such things as the principles, values, key competencies and effective pedagogy as well as some mention of the strands of Technology. There are suggestions for modification and the first page of a revised unit planner highlighting the key foci for unit delivery of Learning Links to the “front end” of the curriculum.

For more detail on this resource, see www.ppta.org.nz/index.php/resources/curriculum-support/curric-resources/cat_view/147-curriculum-resources/163-learning-areas--subjects/167-technology

Final updated unit

The unit was then developed to its final version to align its delivery in the classroom to the 2007 New Zealand Curriculum. This alignment included the consideration of the foci already outlined above and the focus given to the Technology Learning Area to meet Achievement Objectives related to the 3 strands of Technology: Technological Practice, Technological Knowledge and Nature of Technology.

The opportunity was also taken to ensure area specific knowledge and skills in the area of food technology were incorporated into the unit with the support from the “Food Technology Toolbox resource developed in 2007 and now case studied on the Techlink website. The focus for suggested knowledge and skills was sourced from the toolbox at Years 9 and 10.

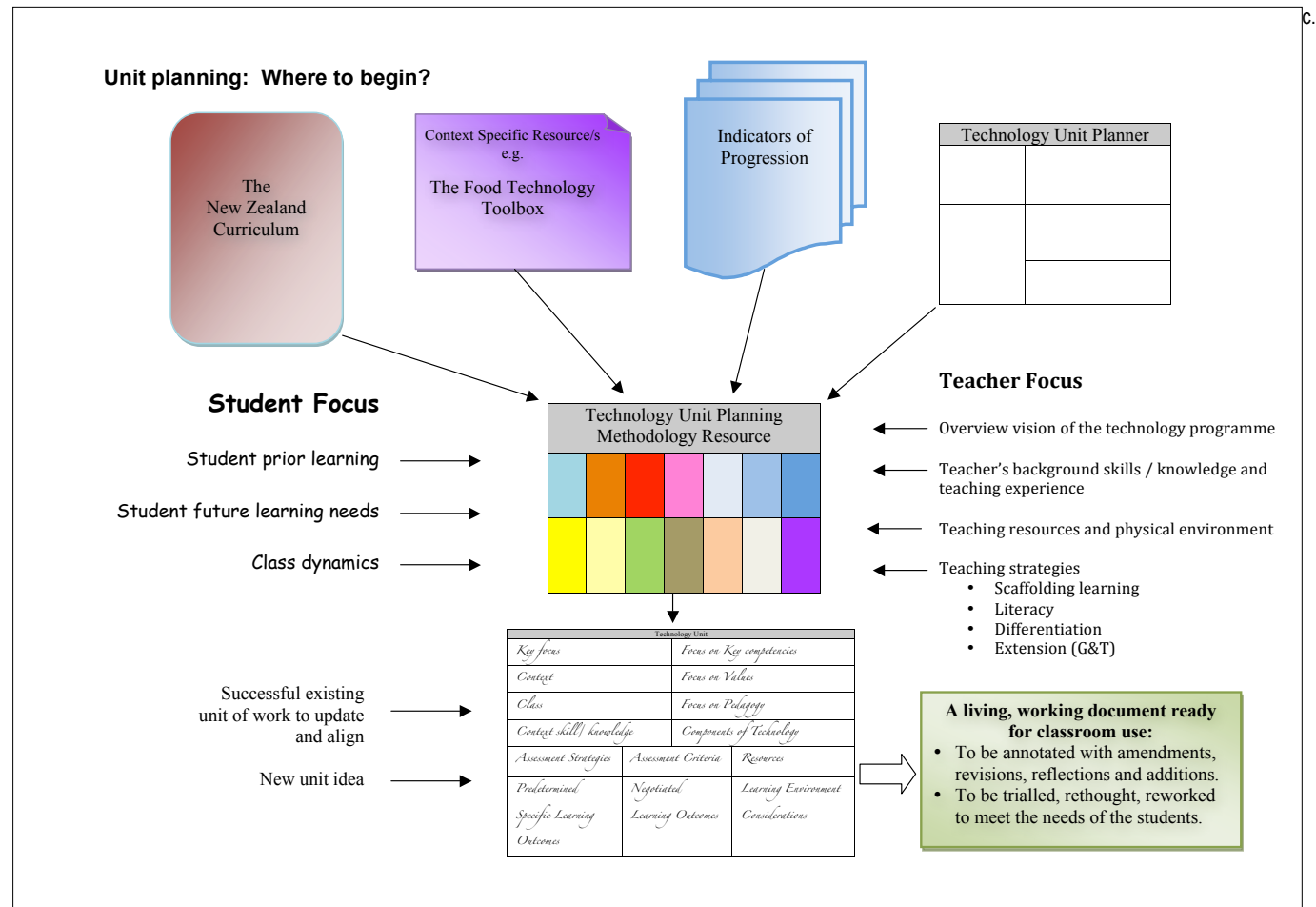
For more detail on the Food Technology Toolbox, see www.techlink.org.nz/Case-studies/Classroom-practice/Teaching-Practice/cp807-food-technology-toolbox/index.htm

For teachers in the area of food this is a useful unit of work to encourage group and team work as a class or groups. It has a focus on developing a group/class outcome with specific focus on outcome development for multi-unit batch production. It could include a variety of negotiated outcomes such as packaging and labelling for the product as well as promotion and marketing strategies dependent on the intended use. The unit of work would be enhanced by an authentic need/opportunity such as a sales table at the school gala or a fundraiser product for a school team or group.

Suggested approaches to unit delivery

Previous student and teacher experiences will probably dictate the focus for the delivery of this unit; however, as there are specific learning outcomes related to all three strands within the learning area of Technology there are a variety of approaches to the delivery of this unit.

1. Delivering the unit as is – with a variety of learning experiences encompassing all three strands with the focus of class/team work to deliver a multi-unit batch produced outcome within a 10-week time frame.
2. Determining a specific teaching emphasis (and strand/s focus) to sit inside a teaching programme such as:
 - a. Developing student skills in producing quality products with a class wide aim for “product sameness”.
 - b. Foster sound technological practice by developing a biscuit outcome for a specific person (stakeholder).
 - c. Focus on the development of a biscuit for health reasons like the gluten free cookie, for example, biscuits lower in fat and sugar.
 - d. Developing knowledge and skills in developing desirable key attributes for an outcome to match the same attributes found in an existing product – a “Me Too” product, for example, the gluten free cookie or another Cookie Time product.
 - e. Developing strategies (literacy/differentiation/extension for G&T) for students to access knowledge and skills from the case study material; and in turn focus on ways to ensure students can then demonstrate understanding by application to their own practice, for example, developing a gluten free outcome.
 - f. Focusing on the development of knowledge and skills and understanding of multi-unit batch production from a teacher/class selected recipe.
This selected focus could be delivered in smaller time frames and support other parts of a teaching programme and student practice. There are some suggested extension activities to support these different foci.
3. This unit could be applied to other food products/contexts such as:
 - a. The Beef and Lamb Competition – the class winner or class selected burger is produced using multi-unit batch production for prepaid orders for



- a. a lunch – staff and or students.
- b. Food-related fundraisers
- c. Frozen meals
- d. Other biscuit types or baking products.

Crest Awards

4. This unit could be used as an opportunity to participate in:
 - a. Young Enterprise Awards
 - b. Massey Food Challenge

BIKKIE TIME: UNIT PLANNER

Unit Title: Bikkie Time

Year Group: 10

Duration: 10 weeks

<p>Learning Area: Technology</p> <p>Future Focus: enterprise</p> <p>Key focus: Food within a Technological System</p> <p>Description of Context</p> <p>Students, as a class, are given an opportunity to develop a biscuit product for production and possible marketing in the school environment.</p>	LEARNING LINKS
<p>Class Description/Students' Past Experiences</p> <p>Year 10 Technology class with a food focus.</p> <p>Students may have prior experience in:</p> <ul style="list-style-type: none"> • recipe formulation • product analysis • sensory and storage testing • simple flow charts, • introduction to HACCP • simple brief development and evaluation • use of some planning and reflection tools 	<p>Focus on Key Competencies</p> <p>Relating to others:</p> <ul style="list-style-type: none"> • Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> • To encourage reading as a means to gain knowledge and skills this with understanding can be used to enhance student practice. Give students the opportunity to confidently read and interpret recipes to develop quality outcomes. Introduce students to the use of flow sheeting in developing a system for a multi-unit batch production process for a biscuit outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> • Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/ or failure of the outcome will affect everyone involved.
<p>Focus on Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> • Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. • Encouraging planning and reflection within the class’s technological practice within a supportive learning environment. <p>Inclusion:</p> <ul style="list-style-type: none"> • Students feel included and valued in their individual participation within the group and class environments for a common goal. 	<p>Focus on Values</p> <p>Community and participation for the common good:</p> <ul style="list-style-type: none"> • The whole class should be involved and feel part of the process and have ownership of the final outcome. <p>Integrity:</p> <ul style="list-style-type: none"> • Involving students being responsible, accountable and act ethically within group/s and class activities; during the final manufacturing process; and within the stakeholder/ market environment. <p>Excellence:</p> <ul style="list-style-type: none"> • To encourage students to aim high and to persevere in the face of difficulties in developing a quality outcome fit for purpose. <p>Focus on Pedagogies</p> <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> • Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. <p>Teaching as inquiry: Focus Inquiry:</p> <ul style="list-style-type: none"> • Establishing a base line and direction to determine what my students have already learned and what they need to learn next. <p style="background-color: #cccccc;">Cross Curriculum Links: English, Mathematics, Social Sciences</p>

Focus on: Context specific skill/ knowledge	Focus on: Component/s of Technology underpinning unit
<ul style="list-style-type: none"> • Develop and demonstrate technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products. • Develop knowledge and skills in recipe formulation for functional modelling and prototyping related to biscuit making. • Develop knowledge and skills in testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing. • Develop knowledge and skills in authentic stakeholder consultation, focus group discussions and feedback analysis. • Develop and demonstrate safe, hygienic, ethical practices in developing a biscuit outcome. • Develop and demonstrate knowledge, skills and understandings of HACCP and production processes for food production. • Develop, test and carry out a multi-unit batch production process for a biscuit outcome to ensure quality assurance – same quality product every time. • Work together as a class to develop a product which is of a marketable quality through multi-unit batch production. 	<p>Technological Practice: Level 5</p> <ul style="list-style-type: none"> • Brief development - develop a class description of the biscuit outcome, including a need or opportunity to address, a conceptual statement, and key attributes defined into performance specifications that reflect authentic stakeholder feedback. • Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points. • Outcome development and evaluation - develop a marketable biscuit prototype through idea generation, modelling, stakeholder feedback, and use the information gained to select and develop the biscuit outcome that best addresses the specifications. <p>Technological Knowledge: Level 4 and 5</p> <ul style="list-style-type: none"> • Technological products - investigate and analyse existing biscuit products to develop understanding that in selecting ingredients performance properties must align with the desired performance specifications for that product. Technological systems - to understand that control mechanisms can work in ways to enhance the fitness for purpose of technological systems by maximising the desired outputs and minimising the undesirable outputs. Also to understand that interfaces between subsystems have an important role in enabling the technological system to work effectively as a whole. <p>Nature of Technology: Level 3</p> <ul style="list-style-type: none"> • Characteristics of Technology - develop understanding of how social and environmental issues impact; and how technological knowledge is validated by the success of an outcome.

Assessment Strategies focusing on Learning Links	Assessment Criteria focusing on Component/s of Technology	Assessment Strategies
<p>Peer and self assessment related to how students:</p> <ul style="list-style-type: none"> • Relate to others • Participation and contribution • Feel accepted within a supportive learning environment <p>Teacher observations</p> <ul style="list-style-type: none"> • Using language symbols and text • Community and participation for the common good • Integrity • Learning to learn <p>Teacher conversations with class/group/individual</p> <p>To encourage:</p> <ul style="list-style-type: none"> • Excellence <p>Unit reflection:</p> <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> • Did students feel accepted and able to be active, visible members of the learning community? <p>Learning enquiry:</p> <ul style="list-style-type: none"> • What has happened as a result of the teaching and what are the implications for future teaching? 	<p>Students can:</p> <p>Technological Practice</p> <p><i>Brief Development:</i></p> <ul style="list-style-type: none"> • Establish the specifications for a biscuit outcome based on the nature of the outcome required to address the need or opportunity, and informed by key stakeholder considerations. <p><i>Planning for practice:</i></p> <ul style="list-style-type: none"> • Select and use planning tools to identify and record key stages, actions to be undertaken, determine progress review points, and manage resources. • Evaluate the fitness for purpose of the final biscuit outcome against the specifications. <p>Technological Knowledge</p> <p><i>Technological products:</i></p> <ul style="list-style-type: none"> • Describe examples related to biscuit making to illustrate how a technological product's fitness for purpose can be/was enhanced by the way a material was shaped. <p><i>Technological systems:</i></p> <ul style="list-style-type: none"> • Explain how processes are controlled to enable the inputs to be transformed to outputs. <p>Nature of Technology</p> <p><i>Characteristics of Technology:</i></p> <ul style="list-style-type: none"> • Describe examples to illustrate how social have influenced the technological practice undertaken. • Explain that technological knowledge is evaluated in terms of how effective it is in supporting the cookie outcome to function successfully. 	<ul style="list-style-type: none"> • Portfolio evidence individually detailed specifications provided within developed brief. • Portfolio evidence to show individual reviewing and reflection using planning tools. • Portfolio evidence of evaluation of trialed prototype. • Response sheet related to Case study snapshot - "Cookie Time 25 years on" • HACCP and production flow chart activities • Response sheet evidence related to Gluten Free cookie case study. • Response sheet related to Case study snapshot - "Cookie Time 25 years on"

Predetermined Specific Learning Outcomes	Negotiated Specific Learning Outcomes
<ul style="list-style-type: none"> • Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation. • Use an initial plan and other planning tools to record reviews and reflection of technological practice for ongoing planning. • Carry out Market Research on existing biscuit products. • Carry out Consumer Research with key stakeholders and focus groups. • Develop, from this research, specifications which for the intended outcome to address the identified opportunity. • Develop skills in biscuit making (using a variety of recipes) in particular: Creaming; Measuring; Ball forming; Uniform sizing. • Develop a biscuit prototype to evaluate against the brief. • Gain key stakeholder and focus group (consumer) comments for the developed biscuit's suitability to address the opportunity. • Develop knowledge and skills of HACCP, batch production in relation to the importance of sameness, flow sheeting for a production process in multi-unit batch production. • Demonstrate knowledge and skills in developing a production process to allow multi-unit batch production of biscuits to occur within the classroom environment. • Trial a developed production process in multi-unit batch production to deliver a quality assured outcome. • Provide an evaluation to state compliance and deficits of the biscuit prototype against specifications and stakeholder and consumer feedback on its suitability with suggestions made to eliminate deficits. 	<ul style="list-style-type: none"> • What opportunities are there to address? Class or teacher selection? • Who will be the stakeholders for consultation and feedback? Decided by class or teacher or selected opportunity? • What type of biscuit will be the class focus to develop for multi- unit batch production? • Do students get to choose who they are grouped / seated by / work with? • What class/group roles need to be established? • Who will take on which roles in the multi-unit batch production? • Do our stakeholders wish us to continue with multi-unit batch manufacture to meet the opportunity? • Can we manufacture and market our developed product? • Will we implement the final product within intended situation? • Will promotion, packaging and labelling be addressed? Who will do this? • Can/should/do we need to carry out a cost analysis? Is it profitable for fundraising?

Learning Environment Considerations	Terminology embedded within component focus	Terminology of possible context specific skills and knowledge
<p>Safety Issues (Refer to MOE Revised Health & Safety Guidelines. - Food safe practices.)</p> <ul style="list-style-type: none"> • All product and sensory testing is carried out in a way they comply to HAACP related to the Food Lab and other guidelines related to things such as disassembly and sensory test set up procedures. • Storage testing is monitored to ensure biscuit samples are safe to eat. • Final production system follows the HACCP established. • The manufactured outcomes are quality assured through established perimeters (including control requirements) within the developed production process for multi-unit batch production of the biscuit outcome. • Final presentation, marketing and selling of the product, within the school environment, follow safe food and hygiene practices related to the selling of food products. 	<ul style="list-style-type: none"> • review and reflection • focus group • functional modelling • outcome • evaluation • fitness for purpose • desired performance specifications • manipulation • forming of materials • technological systems • subsystems • properties of subsystems • inputs, • outputs • control mechanisms • technological knowledge • societal issues • environmental issues 	<ul style="list-style-type: none"> • Desirable attributes • Recipe formulation • Measuring • Creaming • Forming • Size uniformity • Product testing - colour testing, storage testing • Production process • Multi-unit batch production • Product sameness • Flow sheeting • Quality assurance • HACCP • Identified Hazard • Critical control point • Monitoring method • Control measure • Critical limit

Possible case study resources:	Possible doc. resources	Possible Additional Resources
<ul style="list-style-type: none"> • Case study: Gluten Free Cookies - Sourced from the http://www.techlink.org.nz/Case-studies/Technological-practice/Food-and-Biological/Gluten-free-cookies/index.htm • Case study snapshot: Cookie Time 25 years on doc. Sourced from http://www.scoop.co.nz/stories/BU0802/S00152.htm . • Video: “Developing New Food Products” – by Classroom Video • Video: “Biscuit making” -Mass Production of Food –“Arnott’s” Biscuits. – by Classroom Video. 	<ul style="list-style-type: none"> • Initial Plan of Action chart.doc • Comparing CMP. doc • Attributes test doc. • Disassembly of food products doc. • Results sheet for disassembly of a food product doc. • Sensory testing method doc. • Sensory descriptors doc. • sensory tests - variety.doc • Sensory Attributes Testing doc. • Chocolate chip cookies doc. • Chocolate chippies production flow control points doc. • HWT - Flow Process.doc (for ice cream) • food legislation.doc • code of ethics.doc • HACCP for food lab.doc • HWT - HACCP for Ice cream.doc • Cookie Time 25 years on.doc • Gluten Free cookie case study - literacy strategy.doc. 	<ul style="list-style-type: none"> • “Cookie Time” products • Equipment for biscuit making including mixing bowls, flat baking sheets, baking paper, hand-held electric beaters, airtight storage containers • Ingredients for biscuit making – consider bulk buying from local foods wholesaler e.g. chocolate chips • Biscuit recipe/books • Internet access for recipe research • Colour test charts – local paint store • Digital Camera – for product testing and quality assurance control • Storage test air-tight containers • Labels and pens • Safe storage facilities for storage tests

Learning Experiences (Broken into Session Blocks)	Learning Intentions	Resources	Link to Learning outcomes
<p>Introduction to the unit: Bikkie Time</p> <p>Introduce unit of work to the class – introduce unit context related to developing skills and trialling multi-unit batch production interlinked with key competencies and values as we work as a class or in groups to achieve a common goal. Emphasise the aims are to:</p> <ul style="list-style-type: none"> - work together - to relate to others - to be inclusive - feel part of the process and the development of the outcome. <p>With this information given to the class - appropriate groups could be worked out at this stage, if not already established.</p> <p>Setting the scene for Food Technology:</p> <p>Examine Technological Practice within a food industry example.</p> <p>This is to allow students to become aware that Technological Practice is an actual process followed by food companies when developing new products to meet an opportunity in the market place.</p> <p>Watch video sequence related to “Uncle Toby’s Chewy Muesli Bar” - an overview of Food Technology to give an understanding of Food Technology in practice.</p>	<p>Key Competencies Relating to others; Participating and contributing</p> <p>Values Community and participation for the common good; Integrity; Excellence</p> <p>Pedagogy Creating a supportive learning environment</p> <p>Context specific knowledge and skills Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.</p>	<p>White board</p> <p>Video: “Developing New Food Products” -</p>	<p>Do students get to choose who they are grouped / seated by / work with? What class/group roles need to be established?</p> <p>Teacher observations and/ or conversations with class / group / individual - To establish a baseline.</p> <p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p>
<p>Exploratory Work: Examine Technological Practice within an industry example using the</p> <p style="text-align: center;">“Gluten Free cookies” case study</p> <p>Read the resource- in groups, as a class, individually. Work through question and response sheet related to case study.</p>	<p>Key Competencies Using language symbols and text:</p> <p>Context specific skill/ knowledge Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.</p> <p>Component/s of Technology Characteristics of Technology</p>	<p>Gluten Free cookie case study - literacy strategy.doc.</p> <p>Gluten Free cookies question and response sheet</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p> <p>Assessment Strategy Response sheet related to Gluten Free cookie case study.</p>

<p>Exploratory Work Continued:</p> <p>Examine Technological Practice within an industry example using the</p> <p style="text-align: center;"><u>Cookie Time 25 years on.doc</u></p> <p>Read the resource- individually /groups/class. Work through question and response sheet related to case study individually.</p>	<p>Key Competencies Using language symbols and text</p> <p>Context specific skill/ knowledge</p> <p>Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.</p> <p>Develop knowledge and skills in recipe formulation for functional modelling and prototyping related to biscuit making.</p> <p>Component/s of Technology Technological products Characteristics of Technology</p>	<p><u>Cookie Time 25 years on.doc</u></p> <p>“Cookie Time 25 years on” Question and response sheet</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p> <p>Assessment Strategy <i>Response sheet related to Case study snapshot - “Cookie Time 25 years on”</i></p>
<p>Preplanning: The Big 3 in Technology Practice</p> <p>Discuss food technology and what are the 3 parts to Technological Practice: Technology (product, process, package); Market (competitors, current products); Consumer (stakeholder needs, wants, opportunities)</p> <p>Suggested questions for class to discuss might include:</p> <ul style="list-style-type: none"> • To develop our outcome what do we already know in relation to Technology, Market and Consumer? • To develop our outcome what do we need to find out in relation to Technology, Market and Consumer? • What tasks / activities may this include? 	<p>Key Competencies Participating and contributing</p> <p>Values Community and participation for the common good</p>	<p>Whiteboard for class discussion and / or paper for group discussions</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p>
<p>Planning for Technological Practice</p> <p>Class discussion</p> <p>Give out prepared teacher initial plan of action.</p> <p>Discuss ways the initial plan can be used by each student to record reviews and reflection of technological practice for ongoing planning.</p>	<p>Values Community and participation for the common good</p> <p>Key Competencies Participating and contributing</p>	<p><u>Initial Plan of Action chart.doc</u></p> <p>Templates for planning tools Planning tools ideas created by Individual students.</p>	<p>Use an initial plan and other planning tools to record reviews and reflection of technological practice for ongoing planning.</p>

<p>Ask for suggestions of other planning tools students could use during the project to present evidence of reviews and reflection of technological practice for ongoing planning.</p> <p>Give students other planning tool examples and samples that they could use throughout project.</p> <p>Planning to be revised and checked out throughout Technological Practice. Key decisions should be noted using individually chosen planning tools.</p>	<p>Component of Technology Planning for practice</p>		<p>Teacher observations</p> <p>Assessment Strategy Portfolio evidence</p>
<p>Market Research</p> <p>Activities will be planned within the initial planning given to students in a basic form. Here are suggested activities:</p> <ul style="list-style-type: none"> • Carry out a CMP on range of Cookie Time Cookies products – e.g. Gluten free Cookie, Smart Cookie, Rookie Cookie and Big Cookie from Cookie Time. • Carry out a disassembly test on each product – related to chocolate chunks per biscuit, texture of biscuit – crumb feel, identification of ingredients within biscuit – e.g. sugar. • Carry out a sensory evaluation. • Carry out an attribute test on each product. • Identify what attributes are common to all. • Make up an attributes test for the four products to identify where each cookie product fits along the continuum line for each attribute. • Within class/group discussions consider whether Cookie Time has been successful in developing cookie products with similar or same attributes they developed for the original “Big Cookie”. <p>Colour Testing</p> <ul style="list-style-type: none"> • Match the biscuit product to the most similar colour on the chart. • Take a photo of each with a label identifying the product being tested. • Evaluate which product best meets “In Specification”. Is it the same product the focus group liked the best for its appearance? <p>Encourage students to record how Market Research went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Key Competencies Participating and contributing</p> <p>Context specific skill/ knowledge</p> <p>Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.</p> <p>Develop knowledge and skills in testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing.</p> <p>Components of Technology</p> <p>Technological products Technological modelling</p> <p>Planning for practice</p>	<p>“Cookie Time” products Disassembly of food products doc.</p> <p>Results sheet for disassembly of a food product doc. Comparing CMP. doc.</p> <p>Sensory testing method doc. Attributes test doc.</p> <p>Sensory descriptors doc.</p> <p>sensory tests - variety.doc.</p> <p>Sensory Attributes Testing doc.</p> <p>Product Colour Testing chart Labels Digital Camera</p>	<p>Carry out Market Research on existing biscuit products.</p> <p>Describe the attributes of existing products in relation to in the chocolate chip cookie range to develop desirable attributes for the class outcome.</p> <p>Assessment Strategy Portfolio evidence to show individual reviewing and reflection using planning tools.</p>

<p>Consumer Research</p> <p>Aim: To get information on consumer consensus and product composition.</p> <p><u>Suggested class/group activities could include:</u></p> <p>For focus group discussion and sensory testing.</p> <p>Comparison Cookie Time cookies OR other Chocolate chippie biscuits products OR a mixture of BOTH – Other brands may include Griffins, Budget, Farmhouse, and/or brands that make a big cookie product.</p> <p>Within groups discuss the look of the products, packaging and labelling, taste the products, - take photos as you carry out the session – use lead-in questions to direct discussions.</p> <p>Use a selected sensory test method to give students experience carrying out sensory testing.</p> <p>Class discussion wrap-up of the focus group activity for feedback analysis:</p> <ul style="list-style-type: none"> • What did you find out from your focus group activity in relation to existing biscuit products? • What type of biscuit do they want? • What desirable attributes are required for our outcome? <p>Encourage students to record how Consumer Research went. Write evaluative comments about what they learnt from doing this activity.</p> <p>Brief Development</p> <p><u>As a class write a conceptual statement to address the opportunity.</u></p> <p>Brief has a conceptual statement that... "Identifies the target market and purpose of the product (i.e. for school events)."</p> <p><u>Individual activity:</u></p>	<p>Key Competencies Participating and contributing; Relating to others; Using language symbols and text: (using literacy strategies)</p> <p>Values Community and participation for the common good; Integrity</p> <p>Pedagogy Creating a supportive learning environment</p> <p>Context specific knowledge and skills Develop knowledge and skills in testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing.</p> <p>Develop knowledge and skills in authentic stakeholder consultation, focus group discussions and feedback analysis.</p> <p>Components of Technology Technological modelling Planning for practice</p> <p>Components of Technology Brief Development <i>Specifications can be measured and allow evaluation of final prototype or product. Brief will be revised throughout Technological Practice when and if necessary through ongoing consultation with</i></p>	<p>Current market biscuits products</p> <p><u>Sensory descriptors doc.</u></p> <p><u>Sensory attributes chart doc.</u></p> <p><u>sensory tests - variety.doc.</u></p> <p>Develop a response sheet for focus group question lead- in</p> <p>Provide photos of activity from Digital Camera</p> <p>Folio evidence or class activity work can be used for reference material.</p>	<p>Carry out Consumer Research with key stakeholders and focus groups.</p> <p>Who will be the stakeholders /focus group for consultation and feedback?</p> <p>Will promotion, packaging and labelling be addressed?</p> <p>Teacher observations</p> <p>Assessment Strategy Portfolio evidence to show individual reviewing and reflection using planning tools.</p> <p>Develop, from this research, specifications for the intended outcome to address the identified opportunity.</p> <p>Assessment Strategy Portfolio evidence of detailed specifications provided within developed brief.</p>
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<p>Students to write specifications for the biscuit outcome using the information gathered from the feedback analysis on attributes required for the biscuit outcome – remind students that these can be general at first and can be refine later as we develop the outcome through prototyping and functional modelling.</p>	<p><i>representative key stakeholders (Focus Group).</i></p>		
<p>Conceptual Development –functional modelling</p> <p><u>Review and trial existing recipes.</u></p> <p>Carry out the making and trialling of existing recipes in pairs/groups then perform a sensory attributes test on each sample in comparison to the class desirable attributes</p> <p>Recipes used will depend on developed conceptual statement and desirable attributes developed from stakeholder feedback.</p> <p><u>Suggested practicals could include:</u></p> <ul style="list-style-type: none"> • Variety of chocolate chippie biscuit recipe • Toll house cookies • Brownies <p>Develop skills in biscuit making in particular Measuring, Creaming, Shaping, Ball forming, Uniform sizing.</p> <p>4-5 recipes selected with evaluating notes on suitability related to brief. Class decide on 2-3 recipes that best suit the brief. Trial these 2-3 recipes again.</p> <p>Samples kept sealed in airtight containers for each recipe batch, labelled and stored securely for testing next lesson. Samples of each given out to each of the groups for testing attributes comparing to desirable attributes sought. Class discussion as to which best meets the desirable attributes to address the opportunity and why. Present samples to key stakeholders with class’ recommendations and reasons why for final decision on their ideal recipe to address the opportunity.</p> <p>Brief specifications can be revised if necessary after the final decision has been made.</p> <p>Encourage students to record how Concept Development went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Key competencies Relating to others: Using language symbols and text: (using literacy strategies)</p> <p>Values Community and participation for the common good; Integrity; Excellence</p> <p>Context specific knowledge and skills Develop knowledge and skills in recipe formulation for functional modelling and prototyping related to biscuit making.</p> <p>Develop and demonstrate safe, hygienic, ethical practices in developing a biscuit outcome.</p> <p>Components of Technology Technological modelling: Outcome development and evaluation Brief development</p> <p>Planning practice</p>	<p>Equipment for biscuit making</p> <p>Ingredients for biscuit making</p> <p><u>Chocolate chip cookies doc.</u></p> <p>Biscuit recipes</p>	<p>Develop skills biscuit making.</p> <p>Teacher observations - improvement in skills</p> <p>Assessment Strategy Portfolio evidence to show individual reviewing and reflection using planning tools.</p>

<p>Technology Research</p> <p>Watch the video “Biscuit making” -Mass Production of Food – “Arnott’s” Biscuits.</p> <p>The class may need to watch it several times to get all the information.</p> <p>Suggested activities: Individual or group work</p> <ul style="list-style-type: none"> Identify the stages of production Identify the inputs needed for each stage. Identify the outputs desired at each stage. Identify the control points needed – e.g. time temperature, testing. <p>Individually or in pair/groups complete the work sheet on ice cream flow process to gain understanding of a flow process.</p> <p>Using the information identified from the video students are to develop a flow chart similar to the chocolate chippie production flow for this information. This should include control points.</p> <p>Use supporting resources to give students the opportunity to gain some understanding of food legislation and ethics which will impact on control points for food manufacturing.</p> <p>Use supporting resources to give students the opportunity to gain some understanding of HACCP which will impact on control points for food manufacturing.</p> <p>Class discussion</p> <p>Identify the differences between homemade and multi-unit batch production to evaluate the importance of sameness of product related to such things as: creaming thoroughness, colour, size, uniformity, ingredient evenness (e.g. chocolate chips ratio per biscuit) when attempting multi-unit batch production within the class environment.</p> <p>Individual student activity</p> <p>Using knowledge and skills students are to develop their own flow process for multi-unit batch production of the final recipe for</p>	<p>Key Competencies Using language symbols and text:</p> <p>Context specific knowledge and skills Develop knowledge, skills and understandings of HACCP and production processes for food production.</p> <p>Components of Technology Technological systems Technological systems</p>	<p>Video: “Biscuit making” -Mass Production of Food –“Arnott’s” Biscuits.</p> <p><u>HWT - Flow Process.doc</u> (for ice cream)</p> <p><u>Chocolate chippies production flow control points doc.</u></p> <p>Develop a literacy resource to support information from <u>food legislation.doc</u> And <u>code of ethics.doc</u></p> <p><u>HACCP for food lab.doc</u></p> <p><u>HWT - HACCP for Ice cream.doc</u></p>	<p>Develop knowledge and skills of HACCP, batch production in relation to the importance of sameness, flow sheeting for a production process in multi-unit batch production.</p> <p>Teacher observations</p> <p>Assessment Strategy Individual/pair process flow developed</p>
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<p>triallying.</p> <p>Suggested Peer assessment activity</p> <ul style="list-style-type: none"> • These flow processes could be checked by peer assessment for omissions and or corrections to develop a flow process that the whole class can agree on. • Each group chooses the one that best reflects a good flow process for multi-unit batch production. • The teacher could decide which one is used for the final process. <p>Encourage students to record how Technology Research went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Key Competencies Relating to others; Participating and contributing</p> <p>Planning for practice</p>		<p>Peer and self assessment</p> <p>Assessment Strategy Portfolio evidence</p>
<p>Prototype Development</p> <p>Each group makes a batch of biscuits according to developed flow process which may include colour tests, ingredient, time, temperature checks.</p> <p>It may be important to do this more than once to get the multi- unit batch production process as correct as possible.</p> <p>Brief specifications can be revised if necessary after the final decision has been made.</p> <p>Encourage students to record how Prototype Development went. Write evaluative comments about what they learnt from doing this activity.</p> <p>Presentation of Final Prototype</p> <p><u>Class activity</u> Purchase Test - To see if product is consumer suitable to evaluate against brief.</p> <p>Design questions suitable for survey to test suitability of prototype. –to target market /focus groups/key stakeholders. Survey should be written in a simple way with clear questions to gain information.</p>	<p>Key Competencies Relating to others; Using language symbols and text; Participating and contributing</p> <p>Values Community and participation for the common good; Integrity; Excellence</p> <p>Context specific knowledge and skills Develop and demonstrate safe, hygienic, ethical practices in developing a biscuit outcome.</p> <p>Develop, test and carry out a multi-unit batch production process for a biscuit outcome to ensure quality assurance – same quality product every time.</p> <p>Work together as a class to develop a product which is of a marketable quality through multi-unit batch production.</p>	<p>Equipment for biscuit making</p> <p>Ingredients for biscuit making</p> <p>Final recipe and multi-unit batch production process</p> <p>Prepared tests e.g. colour chart</p> <p>Develop a survey to suit purchase test questions</p>	<p>Trial a developed production process in multi-unit batch production to deliver a quality assured outcome.</p> <p>Teacher conversations to encourage excellence</p> <p>Who will take on which roles in the multi-unit batch production?</p> <p>Develop a biscuit prototype to evaluate against the brief.</p> <p>Gain key stakeholder and focus group (consumer) comments for the developed biscuit's suitability to address the opportunity.</p>

<p>Questions may include: Whether people would buy the cookie? What much would they be prepared to pay for the cookie?</p> <p>Students to carry out surveys using sample biscuits made in multi-unit batch production trial. Gather in survey and analyse them in class.</p> <p>Decision Time Is the biscuit outcome ready for commercialization i.e. ready to be made for a school event?</p> <p>Encourage students to record how Presentation of Final Prototype went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Components of Technology Outcome development and evaluation Technological systems Planning for practice</p> <p>Planning for practice</p>		<p>Do our stakeholders wish us to continue with multi-unit batch manufacture to meet the opportunity?</p> <p>Can we manufacture and market our developed product?</p> <p>Assessment Strategy Portfolio evidence</p>
<p>Evaluation of Trialed Prototype to brief:</p> <p><u>Class and group discussions</u> to develop evaluative statements related:</p> <ol style="list-style-type: none"> 1. To measure against how issue is solved, opportunities met; 2. To measure against specifications to evaluate its fitness for purpose; 3. To comment on viability of production of to address opportunity; 4. To the future of the product. <p>Encourage students to record an individual evaluation to the brief. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Key Competencies Relating to others: Participating and contributing</p> <p>Values Community and participation for the common good</p> <p>Components of Technology Outcome development and evaluation</p> <p>Planning for practice</p>	<p>Develop a response sheet for groups to record evaluative comments against the specifications of the brief?</p>	<p>Provide an evaluation to state compliance and deficits of the biscuit prototype against specifications and stakeholder and consumer feedback on its suitability with suggestions made to eliminate deficits.</p> <p>Assessment Strategy Portfolio evidence</p>
<p>So Where To From Here?</p> <p>Class discussion on whether to carry on to marketing and selling product or not?</p> <p>Give students the opportunity to fill in a unit assessment.</p>	<p>Will we implement the final product within intended situation?</p>	<p>Develop a unit assessment for students to fill out.</p>	<p>Peer and self assessment</p> <p>Unit reflection</p>

BIKKIE TIME: UNIT PLANNER WITH COMMENTARY

Unit Title: Bikkie Time

Year Group: 10

Duration: 1 TERM

Learning Area: Technology	LEARNING LINKS	
Future Focus: enterprise	Focus on Key Competencies	
Key focus: Food within a Technological System	<p>Relating to others:</p> <ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> To encourage reading as a means to gain knowledge and skills this with understanding can be used to enhance student practice. Give students the opportunity to confidently read and interpret recipes to develop quality outcomes. Introduce students to the use of flow sheeting in developing a system for a multi-unit batch production process for a biscuit outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/ or failure of the outcome will affect everyone involved. 	
Description of Context		
Students, as a class, are given an opportunity to develop a biscuit product for production and possible marketing in the school environment.	<p>Focus on Values</p> <p>Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should be involved and feel part of the process and have ownership of the final outcome. <p>Integrity:</p> <ul style="list-style-type: none"> Involving students being responsible, accountable and act ethically within group/s and class activities; during the final manufacturing process; and within the stakeholder/ market environment. <p>Excellence:</p> <ul style="list-style-type: none"> To encourage students to aim high and to persevere in the face of difficulties in developing a quality outcome fit for purpose. 	
Class Description/Students' Past Experiences		
Year 10 Technology class with a food focus.	<p>Focus on Pedagogies</p> <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. <p>Teaching as inquiry: Focus Inquiry:</p> <ul style="list-style-type: none"> Establishing a base line and direction to determine what my students have already learned and what they need to learn next. 	
Students may have prior experience in:		
<ul style="list-style-type: none"> recipe formulation product analysis sensory and storage testing simple flow charts, introduction to HACCP simple brief development and evaluation use of some planning and reflection tools 		
Focus on Principles		
<p>Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be "stored as a toolbox" for future application within student practice and beyond this unit of work. Encouraging planning and reflection within the class's technological practice within a supportive learning environment. <p>Inclusion:</p> <ul style="list-style-type: none"> Students feel included and valued in their individual participation within the group and class environments for a common goal. 		

Diana 1/9/09 5:17 PM

Comment: For Technology as a Learning Area refer to page 32 NZC.

Diana 1/9/09 5:17 PM

Comment: Learning Links:

The teacher had to decide on what the **focus** for the unit of work would be in relation to the Learning Links. Since this is a class project with emphasis on working together to develop an quality outcome - it was clear that the **foci** would be selected from the key competencies, (to support related values and underlying principles), that related to working towards a common goal.

The teacher decided that 2 or 3 of each were plenty to **focus** on through the delivery of a unit. The teacher realised that although all of these should be covered within a two year programme it would not be effective teaching to try to **focus** on all in one unit.

The teacher understood that the **focus** would need to be given to these learning links within teaching and assessment strategies. Although the teacher had tended to just "tick the box" to show what a unit covered in the past – the teacher realised with a more focused approach there needed to be some thought given to specifically describing these learning links in relation to the learning experiences.

Diana 1/9/09 5:17 PM

Comment: For future focus refer to page 39.

Diana 1/9/09 5:52 PM

Comment: For key competencies refer to page 12.

Learning experiences should be developed to provide opportunity for students to use and enhance these competencies in their work.

Diana 1/9/09 5:53 PM

Comment: For values refer to page 10.

Learning experiences should be developed to provide opportunity for students to explore and enhance these values in their work.

Diana 1/9/09 5:17 PM

Comment: For principles refer to page 9.

Diana 1/9/09 5:52 PM

Comment: For effective pedagogy refer to page 34 and 35.

These selected pedagogies are to ensure teaching approaches taken have a positive impact on student learning; and the teacher can inquire into the impact of the teaching on the students.

Technology Learning Area	Context Specific Skill/Knowledge	Negotiated Outcomes
Principles	Technological Practice (CoT)	Assessment Strategies
Key Competencies	Technological Knowledge (CoT)	Literacy Strategies
Values	Nature of Technology (CoT)	Extension Activities (G&T)
Effective Pedagogy	Predetermined Specific Learning Outcomes	The Food Technology Toolbox

Focus on: Context specific skill/ knowledge

- Develop **technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.**¹
- Develop knowledge and skills in **recipe formulation for functional modelling and prototyping related to biscuit making.**
- Develop knowledge and skills in **testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing.**
- Develop knowledge and skills in authentic stakeholder consultation, focus group discussions and feedback analysis.
- Develop safe, hygienic, ethical practices in developing a biscuit outcome.
- Develop knowledge, skills and understandings of HACCP and production processes for food production.
- Develop, test and carry out a multi-unit batch production process for a biscuit outcome to ensure quality assurance – same quality product every time.
- Work together as a class to develop a product which is of a marketable quality through multi-unit batch production.

Focus on: Component/s of Technology underpinning unit

- Technological Practice: Level 5**
- Brief development - develop a class description of the biscuit outcome, including a need or opportunity to address, a conceptual statement, and **key attributes defined into performance specifications that reflect authentic stakeholder feedback.**
 - Planning for practice - class planning with opportunities to use a *variety of planning tools* to manage resources and to reflect and revise for ongoing planning at key progress points.
 - Outcome development and evaluation - develop **a marketable biscuit prototype** through idea generation, modelling, stakeholder feedback, and use the information gained to select and **develop the biscuit outcome that best addresses the specifications.**

- Technological Knowledge: Level 4 and 5**
- Technological modelling - use of testing procedures and prototyping for ongoing refinement of biscuit outcome and to ensure its suitability for multi unit production.
 - **Technological products - investigate and analyse existing biscuit products to develop understanding that in selecting ingredients performance properties must align with the desired performance specifications for that product.**
 - **Technological systems - to understand that control mechanisms can work in ways to enhance the fitness for purpose of technological systems by maximising the desired outputs and minimising the undesirable outputs. Also to understand that interfaces between subsystems have an important role in enabling the technological system to work effectively as a whole.**

- Nature of Technology: Level 3**
- **Characteristics of Technology - develop understanding of how social and environmental issues impact; and how technological knowledge is validated by the success of an outcome.**
 - *Characteristics of Technological Outcomes - develop understanding of meeting fitness for purpose through clearly defined physical nature and functional nature requirements.*

Diana 1/9/09 5:17 PM

Comment: Context Specific skill/knowledge: The teacher thought about the skills and knowledge that were needed to support the unit of work. As this is a class activity the teacher recognised the need to use this unit to introduce and develop specific class wide knowledge, skills and understandings that could then be further built on in units of work focusing on individually developed outcomes.

Diana 1/9/09 5:16 PM

Comment: Components of Technology: The teacher decided to look at the 3 strands to see where the existing unit of work aligned with the NZC. This allowed the teacher to work out where the class level would be aimed for each strand. The teacher realised that “One size would not fit all” – meaning that the level for each strand had to be determined by student prior knowledge and experiences. Just because it has been considered that Level 5 aligns with Year 10 student achievement did not mean that these Year 10 students would be able to taught at this level.

Technological Knowledge covers some AOs from Level 4 and 5 while the Nature of Technolog[... [1]

Diana 1/9/09 5:16 PM

Comment: Technological Practice: Although the opportunity is class driven the focus will be to encourage individual students to develop specifications for brief development.

Diana 1/9/09 5:16 PM

Comment: Technological Knowledge: To develop desirable key attributes for this analysing existing products was considered important. However, the main focus for this unit is the development of an outcome for multi-unit batch production.

Diana 1/9/09 5:51 PM

Comment: Nature of Technology: The teacher saw this class activity as a valuable opportunity to introduce case study material to develop knowledge and understandings from outside technological practice. The focus for this is the “Gluten Free cookie” case study.

Diana 1/9/09 5:56 PM

Comment: Characteristics of Technological Outcomes: The teacher also recognised that there may be teaching and learning opportunities related to defining and identifying the terms – physical nature and functional nature.

Diana 11/8/09 9:09 AM

Comment: The teacher realised that some of the CoTs and context specific knowledge and skills interrelated. This is colour highlighted to show how.

¹ Bold indicates unit focus.

Technology Learning Area	Context Specific Skill/Knowledge	Negotiated Outcomes
Principles	Technological Practice (CoT)	Assessment Strategies
Key Competencies	Technological Knowledge (CoT)	Literacy Strategies
Values	Nature of Technology (CoT)	Extension Activities (G&T)
Effective Pedagogy	Predetermined Specific Learning Outcomes	The Food Technology Toolbox

Learning Environment Considerations	Terminology embedded within component focus	Terminology of possible context specific skills and knowledge
<p>Safety Issues (Refer to MOE Revised Health & Safety Guidelines. - Food safe practices.)</p> <ul style="list-style-type: none"> HACCP in the food lab is necessary with larger class numbers - 24 is an optimum number to work within the constraints of the room and resources available. (HACCP for food lab doc.) Students should show a responsible and proactive manner in the way they comply to HACCP related to the Food Lab. No students participate in practical tasks without the appropriate footwear. All product and sensory testing is carried out in a way they comply to HAACP related to the Food Lab and other guidelines related to things such as disassembly and sensory test set up procedures.¹ Storage testing is monitored to ensure biscuit samples are safe to eat. Final production system follows the HACCP established. The manufactured outcomes are quality assured through established perimeters (including control requirements) within the developed production process for multi-unit batch production of the biscuit outcome. Final presentation, marketing and selling of the product, within the school environment, follow safe food and hygiene practices related to the selling of food products. 	<p>Brief Development:</p> <ul style="list-style-type: none"> brief, opportunity, conceptual statement, key attributes, specifications, stakeholder, focus group <p>Planning for practice:</p> <ul style="list-style-type: none"> key stages, resources, planning tools, review, reflection <p>Outcome development and evaluation:</p> <ul style="list-style-type: none"> functional modelling, outcome, evaluation, fitness for purpose <p>Technological modelling:</p> <ul style="list-style-type: none"> functional modelling, prototyping, testing procedures <p>Technological products:</p> <ul style="list-style-type: none"> desired performance specifications, manipulation, forming of materials <p>Technological systems:</p> <ul style="list-style-type: none"> technological systems, subsystems, properties of subsystems, inputs, outputs, control mechanisms <p>Characteristics of Technology:</p> <ul style="list-style-type: none"> technological knowledge, societal issues, environmental issues <p>Characteristics of Technological Outcomes:</p> <ul style="list-style-type: none"> physical nature, functional nature 	<ul style="list-style-type: none"> 3 parts to Technological Practice: Technology, Market and Consumer CMPS – Comparing market products - disassembly Sensory testing – hedonic scale, ranking test, attribute testing, sensory analysis Desirable attributes Recipe formulation Measuring Creaming Forming Size uniformity Product testing - colour testing, storage testing Viability Production system Multi-unit batch production Product sameness Flow sheeting Sub setting Inputs Outputs Quality assurance HACCP Identified Hazard Critical control point Monitoring method Control measure Critical limit Marketing/promotion Saleability Cost Analysis Labelling Packaging

Diana 1/9/09 5:53 PM

Comment: Learning Environment Considerations:
Although the teacher has considered all safety considerations which appear in other unit /programme planning in the past the teacher decided to identify specific issues related to unit delivery. These are in bold.

Diana 1/9/09 5:53 PM

Comment: Terminology embedded with component focus:
There is a lot of terminology for unit focus because of the need to introduce new terms in relation to Technological systems.

Note down key words that students should be familiar with by the end of this unit in relation to the identified components. Learning experiences should be developed to provide opportunity for students to explore these terms and employ them in their work.

Diana 1/9/09 5:54 PM

Comment: Terminology of possible context specific skills and knowledge:
The teacher identified what terminology may be used within unit delivery and then considered what terminology would be the focus.

Diana 1/9/09 5:23 PM

Comment: Red highlight links to Learning Link – Values.

Diana 1/9/09 5:45 PM

Comment: Bright Yellow highlight links to Context specific knowledge and skills.

Diana 1/9/09 5:24 PM

Comment: Shades of Blue highlights link to Components of Technology (CoTs)

Diana 1/9/09 5:23 PM

Comment: Green highlight links to Negotiated Learning Outcomes.

¹ Safety issues and terminology in bold indicate unit focus.
















Technology Learning Area	Context Specific Skill/Knowledge	Negotiated Outcomes
Principles	Technological Practice (CoT)	Assessment Strategies
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Possible case study resources:	Possible doc. resources	Possible Additional Resources
<p>• Case study: Gluten Free Cookies - Sourced from the http://www.techlink.org.nz/Case-studies/Technological-practice/Food-and-Biological/Gluten-free-cookies/index.htm - strongly recommended for wide use as a Food Technology resource.</p> <p>• Gluten Free cookie case study - literacy strategy.doc – <i>could be used as a homework activity to allow students the opportunity to become familiar with the case study – attempt to be student friendly.</i></p> <p>• Case study snapshot: Cookie Time 25 years On doc. Sourced from http://www.scoop.co.nz/stories/BU0802/S00152.htm -see learning experiences for strategies for use.</p> <p>• Video: “Developing New Food Products” - Follow the concept to marketing of a reduced fat muesli bar. Plenty of scope for extension activities - Produced by Classroom Video- strongly recommended for wide use as a Food Technology resource.</p> <p>• Video: “Biscuit making” -Mass Production of Food –“Arnott’s” Biscuits. - Commentary outlines how biscuits are formed, shaped, baked and hygienically packaged on the production line. Quality assurance is explained and a product tested for contamination. It goes on to look at the development of a new product in the pilot plant, including testing and market research. Produced by Classroom Video -strongly recommended for wide use as a Food Technology resource.</p> <p>Search “YouTube” for mass production video clips: for example:</p> <ul style="list-style-type: none"> • Good manufacturing practices - Good resource for developing Production process and HACCP <p>http://www.youtube.com/watch?v=4wTIP-q2-sw&feature=related</p>	<p>• <i>Initial Plan of Action chart.doc</i></p> <ul style="list-style-type: none"> • Comparing CMP. doc • Attributes test doc. • Disassembly of food products doc. • Results sheet for disassembly of a food product doc. • Sensory testing method doc. • Sensory descriptors doc. • sensory tests - variety.doc • Sensory Attributes Testing doc. <p>• Chocolate chip cookies doc.</p> <p>• Chocolate chippies production flow control points doc.</p> <p>• HWT - Flow Process.doc (for ice cream)</p> <p>• food legislation.doc</p> <p>• code of ethics.doc</p> <p>• HACCP for food lab.doc</p> <p>• HWT - HACCP for Ice cream.doc</p> <p>Extension Activity Resources</p> <ul style="list-style-type: none"> • Muesli bar Toolbox Activity.doc for extension activities • Cookie Toolbox Activity.doc for extension activities • Cookie Time 25 years on.doc • Gluten Free cookie case study - literacy strategy.doc <p>Links to other Resources</p> <ul style="list-style-type: none"> • Food Technology Toolbox http://www.techlink.org.nz/Case-studies/Classroom-practice/Teaching-Practice/cp807-food-technology-toolbox/index.htm 	<ul style="list-style-type: none"> • “Cookie Time” products • Equipment for biscuit making including mixing bowls, flat baking sheets, baking paper, hand-held electric beaters, airtight storage containers • Ingredients for biscuit making – consider bulk buying from local foods wholesaler e.g. chocolate chips • Biscuit recipe/books • Internet access for recipe research • Colour test charts – local paint store • Digital Camera – for product testing and quality assurance control • Storage test air-tight containers • Labels and pens • Safe storage facilities for storage tests <p>• Video player</p> <ul style="list-style-type: none"> • Packaging development software e.g. http://sketchup.google.com/ • Labelling programme e.g. http://www.xyris.com.au/labelling/default.htm • http://www.futureintech.org.nz

Diana 1/9/09 5:42 PM
Comment: Resources:
 This is an extensive list of resources. The resources in bold are resources aid the delivery of learning experiences for the focus of the unit.

Diana 1/9/09 5:44 PM
Comment: The brown highlight links to possible literacy strategies that could be used within unit delivery.

Diana 1/9/09 5:44 PM
Comment: The purple highlight links to the Food Technology Toolbox.

	Technology Learning Area		Context Specific Skill/Knowledge		Negotiated Outcomes
	Principles		Technological Practice (CoT)		Assessment Strategies
	Key Competencies		Technological Knowledge (CoT)		Literacy Strategies
	Values		Nature of Technology (CoT)		Extension Activities (G&T)
	Effective Pedagogy		Predetermined Specific Learning Outcomes		The Food Technology Toolbox

Assessment Strategies focusing on Learning Links	Assessment Criteria focusing on Component/s of Technology	Assessment Strategies
<p>Unit preparation: getting ready to deliver unit:</p> <p>Focusing inquiry:</p> <ul style="list-style-type: none"> Establishing a base line and direction to determine what my students have already learned and what they need to learn next. What is important and worthwhile spending time on given where my students are at – what adaptations should I make, what should be my teaching focus within this context? <p>Teaching inquiry:</p> <ul style="list-style-type: none"> What strategies (including literacy strategies) are most likely to help my students learn? <p>Unit progress: delivering the unit – how is it going?</p> <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Am I creating an environment for students to feel accepted and to be active, visible members of the class? <p>Learning enquiry:</p> <ul style="list-style-type: none"> What has happened as a result of the teaching and what are the implications for future unit teaching? How are the class/groups/ individual students responding? Is there something I need to change? Do I need to change the learning focus? What predetermined learning outcomes are not working? Not feasible? Losing student interest? Overloading student learning? Time left? What are the negotiated learning outcomes that will be considered? Will they be feasible? Are they necessary for student learning? Do they spark student interest? Time left? What are the next steps for learning? How do I retain student interest/learning? <p>Learning to learn:</p> <ul style="list-style-type: none"> Encouraging planning and reflection within the class's technological practice within a supportive learning environment. 	<p>Students can:</p> <p>Technological Practice</p> <p>Brief Development:</p> <ul style="list-style-type: none"> As a class, identify an opportunity from the given context and issue. As a class, establish a conceptual statement that justifies the nature of the biscuit outcome and why the biscuit outcome should be developed. Establish the specifications for a biscuit outcome based on the nature of the outcome required to address the need or opportunity, and informed by key stakeholder considerations.¹ <p>Planning for practice:</p> <ul style="list-style-type: none"> Select and use planning tools to identify and record key stages, actions to be undertaken, determine progress review points, and manage resources. <p>Outcome development and evaluation:</p> <ul style="list-style-type: none"> As a class, undertake functional modelling to develop biscuit recipe ideas into a conceptual design for a biscuit that addresses the specifications. As a class, produce and trial a biscuit prototype of the outcome. Evaluate the fitness for purpose of the final biscuit outcome against the specifications. <p>Technological Knowledge</p> <p>Technological modelling:</p> <ul style="list-style-type: none"> As a class, discuss examples of prototyping used to explain how evidence gathered provided justification for evaluating a technological outcome as fit for purpose or in need of refinement. <p>Technological products:</p>	<p>Portfolio evidence of class identified opportunity and final conceptual statement with individually detailed specifications provided within developed brief, including possible physical and functional nature options for the biscuit outcome.</p> <p>Portfolio evidence to show individual reviewing and reflection using planning tools.</p> <p>Portfolio evidence of evaluation of trialled prototype.</p> <p>Class discussions in relation to the Gluten free case study, Cookie Time products and own outcome developments</p>

Diana 1/9/09 5:25 PM
Comment: Assessment Strategies for Learning Links:
 In the development of this unit the teacher was aware that the Learning Links were integral to unit planning, delivery and reflection. This is a brainstorm of questions the teacher thought about. The final unit plan would only focus on what assessment strategies would be used.

Diana 1/9/09 5:25 PM
Comment: Assessment Criteria:
 The teacher used the indicators of progression to identify assessment criteria. The teacher tried to link these to the class biscuit outcome. Progression indicators were identified for individual student assessment – these are in bold.
















Diana 1/9/09 5:25 PM
Comment: Assessment Strategies:
 As the unit is a class activity the teacher found the assessment strategies difficult to identify until the learning experiences were more clearly outlined. As these were developed this column was added showing alignment with the Assessment Criteria.

¹ **Bold** indicates unit focus for Assessment Criteria for individual student assessment.

² *Italics* indicate teaching opportunities within learning experiences, extension activities and class discussions.

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<p>Peer and self assessment related to how students:</p> <p>Relate to others:</p> <ul style="list-style-type: none"> all students being involved and feeling part of the process and have ownership of the final product. <p>Participation and contribution:</p> <ul style="list-style-type: none"> all students being part of the project and contributing in a worthwhile manner for the common goal within class and group. <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> all students feeling accepted and being active, visible members of the learning community. <p>Teacher observations of individual students within a supportive learning environment:</p> <p>Using language symbols and text:</p> <ul style="list-style-type: none"> all students taking part in reading activities to gain and develop knowledge and skills <p>Community and participation for the common good:</p> <ul style="list-style-type: none"> working together towards the common goal - developing a quality outcome <p>Integrity:</p> <ul style="list-style-type: none"> Involving being responsible, accountable and act ethically within the group and class and eventual market environment. <p>Learning to learn:</p> <ul style="list-style-type: none"> Using the knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Teacher conversations with class/group/individual To encourage:</p> <p>Excellence:</p> <ul style="list-style-type: none"> To encourage students to aim high, not to give up and to persevere in the face of difficulties; not to compromise if possible in developing a quality product. <p>Unit reflection:</p> <p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Did students feel accepted and able to be active, visible members of the learning community? <p>Learning enquiry:</p> <ul style="list-style-type: none"> What has happened as a result of the teaching and what are the implications for future teaching? Is there something I need to change? What are the next steps for learning? 	<ul style="list-style-type: none"> Describe examples related to biscuit making to illustrate how a technological product’s fitness for purpose can be/was enhanced by the way a material was shaped. <p>Technological systems:</p> <ul style="list-style-type: none"> Explain how processes are controlled to enable the inputs to be transformed to outputs. As a class, describe examples to illustrate how a technological system’s fitness for purpose was enhanced by the use of control mechanisms. As a class or in groups, identify subsystems within technological systems and explain their properties. <p>Nature of Technology</p> <p>Characteristics of Technology:</p> <ul style="list-style-type: none"> Describe examples to illustrate how social have influenced the technological practice undertaken. Explain that technological knowledge is evaluated in terms of how effective it is in supporting the cookie outcome to function successfully. <p>Characteristics of Technological Outcomes:</p> <ul style="list-style-type: none"> <i>As a class, describe possible physical and functional nature options for a biscuit outcome within specifications when provided with a opportunity.</i> <i>As a class explain the relationship between the physical and functional nature of technological biscuit outcomes.²</i> 	<p>Response sheet related to Case study snapshot - “Cookie Time 25 years on”</p> <p>HACCP and production flow chart activities</p> <p>Response sheet evidence related to Gluten Free cookie case study.</p> <p>Response sheet related to Case study snapshot - “Cookie Time 25 years on”</p> <p>Formative assessment <i>Class discussions in relation to gaining some awareness of what physical nature and functional nature mean in a biscuit context. Class discussion may allow individual students the opportunity to develop understanding of the physical nature and functional nature of biscuits and identify the relationship between the two.</i></p>
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Predetermined Specific Learning Outcomes	Negotiated Specific Learning Outcomes
<ul style="list-style-type: none"> • Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.¹ • Discuss what social and environmental issues and environmental issues influence the development of new food products. • Identify what technological knowledge was used in the “Gluten Free cookie” case. • Explain how that technological knowledge used was effective in supporting the outcome to function successfully. • <i>Identify the key stages within Technological Practice within a food context.</i>² • As a class identify key stages and resources which need to be planned for. • Use an initial plan developed from this information and other planning tools to record reviews and reflection of technological practice for ongoing planning. • Identify an opportunity for the given context.³ • Carry out Market Research on existing biscuit products. • Develop knowledge and skills related to “The Food Technology Toolbox” in setting up and carrying out product and sensory testing - Using a range of testing methods – Products Tests such as: CMPs, Disassembly, Attribute scales, Storage, Colour, Sensory Analysis; Sensory Tests such as Paired Comparisons, Ranking, Hedonic tests. • <i>Gain an understanding of the physical nature and functional nature of biscuits and identify the relationship between the two.</i> • Describe the attributes of existing products in relation to in the chocolate chip cookie range to develop desirable attributes for the class outcome. • Develop knowledge and skills related to the “Food Technology Toolbox” in surveying and gathering useful information from focus group discussions and key stakeholders. • Carry out Consumer Research with key stakeholders and focus groups. • Develop, from this research, specifications which may include possible physical and functional nature options for the intended outcome to address the identified opportunity. 	<ul style="list-style-type: none"> • What opportunities are there to address? Class or teacher selection? • Who will be the stakeholders for consultation and feedback? Decided by class or teacher or selected opportunity? • What type of biscuit will be the class focus to develop for multi- unit batch production? • Is there time to use introduce or return to teaching about the big 3 of Technology practice? Could a food technologist be brought in for a visit to make it “real”? Is it worthwhile for the focus of the unit? Would activity ensure students felt they had contributed to the planning of the project? • What /how can individual student evidence be presented in relation to research of technological practice and current market products, brief development, planning for practice, functional modelling and prototyping, developing the production process for multi-unit batch production, and evaluation of fitness for purpose to demonstrate individual student understanding and participation? • Should students source recipes independently from home and other available resources e.g. library, internet? Or will these be done by the teacher? • How can I ensure learning experiences are enhanced by group/class work? How can I use group/class work to monitor learning and understanding against the indicators of progression? • Do students get to choose who they are grouped / seated by / work with? Is it random or teacher controlled? Based on friendship, ability levels mixed or streamed, gender balance or separation, alphabetical, behavioural, personality, to suit group roles? – does it enhance student participation and

Diana 1/9/09 5:47 PM

Comment: Predetermined Specific Learning Outcomes:
 This is a big list of possible Predetermined Specific Learning Outcomes for this unit. Doing this brainstorm of possibilities gave the teacher a range of learning outcomes that could be covered. However this list was refined down to ensure the unit had a clear focus related to what the teacher wanted to achieve from its delivery. These learning outcomes show links to the CoTs, Context specific Knowledge and Skills and the Food Technology Toolbox. The light yellow highlights Predetermined Specific Learning Outcomes.
















Diana 1/9/09 5:49 PM

Comment: Negotiated Learning Outcomes:
 This part of a unit plan is usually left blank. The teacher had been unsure in the past as to what this really meant in unit planning and subsequent delivery. In developing this unit plan the teacher brainstormed scenarios that could arise within the delivery of the unit. These scenarios led to questions that the teacher might have to consider. The “what ifs”. The teacher realised that there were learning links to the values, key competencies and pedagogy foci within these questions. The green highlights Negotiated Specific Learning Outcomes. The other colours highlight links to Learning Links.

¹ **Bold** indicates unit focus for individual students.

² *Italics* indicate opportunities for learning experience within extension activities.

³ Predetermined Specific Learning Outcomes in not in bold are learning outcomes to be expected as a class group.

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<ul style="list-style-type: none"> • Demonstrate an understanding of the safe use of equipment, hygienic handling of ingredients and test samples and ethical practices in food production to meet codes of practice. 	<p>contribution?</p>
<ul style="list-style-type: none"> • Develop skills in biscuit making (using a variety of recipes) in particular: Creaming; Measuring; Ball forming; Uniform sizing. • Demonstrate knowledge and skills from the “Food Technology Toolbox” in setting up and carrying out product and sensory testing - Using a range of testing methods – Products Tests such as: CMPs, Disassembly, Attribute scales, Storage, Colour, Sensory Analysis; Sensory Tests such as Paired Comparisons, Ranking, Hedonic tests. • Develop a biscuit prototype to evaluate against the brief. • Gain key stakeholder and focus group (consumer) comments for the developed biscuit’s suitability to address the opportunity. 	<ul style="list-style-type: none"> • What class/group roles need to be established? Will these be allocated by teacher or students? Are these necessary for individual student participation and contribution? What does the teacher need to do to ensure effective problem solving strategies are carried out by students to help class/group dynamics related to such things as: social, leadership, participation, contribution and recording issues? What strategies should be considered in the event of class/group dynamics breaking down to the detriment of the students and the unit?
<ul style="list-style-type: none"> • Identify the differences between homemade and multi-unit batch production to evaluate the importance of sameness of product related to such things as: creaming thoroughness, colour, size, uniformity, ingredient evenness (e.g. chocolate chips ratio per biscuit) when attempting multi-unit batch production within the class environment. 	<ul style="list-style-type: none"> • Who will take on which roles in the multi-unit batch production? • Do our stakeholders wish us to continue with multi-unit batch manufacture to meet the opportunity?
<ul style="list-style-type: none"> • Describe examples related to biscuit making to illustrate how a technological product’s fitness for purpose can be/was enhanced by the way a material was shaped. 	<ul style="list-style-type: none"> • Can we manufacture and market our developed product?
<ul style="list-style-type: none"> • Develop knowledge and skills from the “Food Technology Toolbox” and Component of Technological Systems within of: HACCP, batch production, flow sheeting, the role of properties (inputs and outputs) in subsetting; and control requirements in a production process in multi-unit batch production. 	<ul style="list-style-type: none"> • Will we implement the final product within intended situation?
<ul style="list-style-type: none"> • Demonstrate knowledge and skills in developing a production process to allow multi-unit batch production of biscuits to occur within the classroom environment. 	<ul style="list-style-type: none"> • Will promotion, packaging and labelling be addressed? Who will do this?
<ul style="list-style-type: none"> • Trial a developed production process in multi-unit batch production to deliver a quality assured outcome. 	<ul style="list-style-type: none"> • Can/should/do we need to carry out a cost analysis? Is it profitable for fundraising?
<ul style="list-style-type: none"> • Provide an evaluation to state compliance and deficits of the biscuit prototype against specifications and stakeholder and consumer feedback on its suitability with suggestions made to eliminate deficits. 	<ul style="list-style-type: none"> • Consideration for selling products – area, furniture, money collection, hygiene procedures –gloves, sanitiser, aprons?

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Sourced from “Food Technology Tool Box” for Year 9 – 10

Food Formulation	Food Safety and Legislation	Food Packaging and Labelling	Food Product Testing	Food Production and Preservation
<p>Food Chemistry</p> <ul style="list-style-type: none"> Understand the role of Protein, Carbohydrates and Fats in common foods – Gluten and its role in biscuit making Basic functionality of nutrients Role of nutrients in the body including water, minerals and vitamins with a focus on calcium and iron Reinforce throughout project/s <p>Nutrition</p> <ul style="list-style-type: none"> Reinforce basic nutrition Food groups “Mission On” Nutritional Guidelines Identify specific nutritional needs for a stakeholder group e.g. teenagers Current nutritional issues Key trends – e.g. social issues <p>Manipulation of Ingredients</p> <ul style="list-style-type: none"> Build cooking skills - making and shaping biscuits Basic properties of food introduced within practical tasks – discussion around these – physical nature and functional nature of biscuits Innovative ingredients and processes – case study on Gluten Free cookies <p>Formulating Techniques</p> <ul style="list-style-type: none"> Simple recipe changes driven by refined specifications of developed brief related to ingredients/ process – for multi-unit batch production for a biscuit outcome 	<p>Ethics of a Food Technologist</p> <ul style="list-style-type: none"> Current ethical issues – ethics in relation to multi-unit production and selling a biscuit product in the school environment <p>Food Safety</p> <ul style="list-style-type: none"> Basic Personal Hygiene and Food Handling practices reinforced Introduce common food organisms e.g. Salmonella, Campylobacter, E coli Ideal conditions for growth Preventive measures <p>Introduce concepts of:</p> <ul style="list-style-type: none"> HACCP OSH Current food safety issues <p>Standards/ Codes and Legislation</p> <ul style="list-style-type: none"> Introduce food standards related to biscuit outcome and manufacture 	<p>Packaging as a sales tool</p> <ul style="list-style-type: none"> Introduce the 4 Ps – product, price, place, and promotion <p>Packaging as a Preservation Method</p> <ul style="list-style-type: none"> Functionality of packaging material Selecting materials to suit storage environment Tamper proofing Shelf life <p>Package and Label Design</p> <ul style="list-style-type: none"> Marketing requirements of packaging and labelling in relation to gluten free products Label design – including nutritional information Use “food works” or a Nutritional analysis source to develop nutritional information panel related to a food product <p>Package and Label Legislation/Ethics and Codes of Practice</p> <p>Define terms:</p> <ul style="list-style-type: none"> Best Before Use by date Allergens Key Trends 	<p>Consumer Sensory Testing</p> <ul style="list-style-type: none"> Sensory testing Sensory testing protocols introduced – preparing, setting up and analysis Ranking test Hedonic scale test <p>Consumer Market Research and Testing</p> <ul style="list-style-type: none"> Individual/class target market surveys or interviews of individual stakeholders Setting up focus groups Ethical considerations <p>Chemical and Microbiological Testing</p> <ul style="list-style-type: none"> Simple storage testing Simple attribute testing – related to key desirable attributes <p>Instrumental Testing</p> <ul style="list-style-type: none"> Colour Viscosity Hardness/ Tenderness 	<p>Manufacturing Processes</p> <ul style="list-style-type: none"> Exposure to real industry production processes e.g. video/factory visit/outside speaker in relation to manufacturing a gluten free cookie and biscuit making Introduce process diagram symbols Modify a HACCP Plan to suit a food product – biscuit outcome Develop a detailed block diagram with control points Understand processing steps required to make common food products e.g. sieving, beating, creaming, baking (basic cooking terminology) Innovation in production and preservation <p>Preservation</p> <ul style="list-style-type: none"> Principles of Preservation Identify methods of preservation Preservation and packaging and Shelf life Innovation in preservation Key Trends

Diana 1/9/09 5:41 PM

Comment: The Food Technology Toolbox Resource:

The teacher wanted to ensure that knowledge, skills and understandings were developed within this unit related specifically to Food Technology. The Food Technology Toolbox is a resource case studied on the Techlink website.

The teacher has identified the content material for Years 9 -10 that could be used within learning experiences. The content should be given a similar focus towards multi-unit batch production with the teacher being aware that a full teaching programme will cover other content and would also consider strategies to ensure students are making a seamless progression from each level.

The teacher also identified the links to the CoTs and the Context specific Knowledge and Skills within this content material.

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Learning Experiences (Broken into Session Blocks)	Learning Intentions	Resources	Link to Learning outcomes
<p>Introduction to the unit: Bikkie Time</p> <p>Introduce unit of work to the class – introduce unit context related to developing skills and trialling multi-unit batch production interlinked with key competencies and values as we work as a class or in groups to achieve a common goal. Emphasise the aims are to:</p> <ul style="list-style-type: none"> - work together - to relate to others - to be inclusive - feel part of the process and the development of the outcome. <p>With this information given to the class - appropriate groups could be worked out at this stage, if not already established.</p>	<p>Key Competencies Relating to others:</p> <ul style="list-style-type: none"> • Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> • Give students the opportunity to feel part of a common goal; to understand that the success and/ or failure of the outcome will affect everyone involved. <p>Values Community and participation for the common good:</p> <ul style="list-style-type: none"> • The whole class should be involved and feel part of the process and have ownership of the final outcome. <p>Integrity:</p> <ul style="list-style-type: none"> • Involving students being responsible, accountable and act ethically within group/s and class activities. <p>Excellence: To encourage students to aim high and to persevere in the face of difficulties in developing a quality outcome fit for purpose.</p> <p>Pedagogy Creating a supportive learning environment:</p> <ul style="list-style-type: none"> • Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. 		<p>Do students get to choose who they are grouped / seated by / work with?</p> <p>What class/group role need to be established?</p> <p>Assessment Strategies focusing on Learning Links Teacher observation and/ or conversation with class / group / individual within a supportive learning environment - to establish a baseline.</p>

Diana 1/9/09 5:41 PM

Comment: Learning Experiences:
When the teacher revisited the learning experiences within this unit of work the intention was to provide as much information for other teachers to see the thinking and planning that might happen “behind the scenes” of unit delivery.
This resource is intended to give teachers “food for thought” in what a Technology unit could encompass rather than just show the learning foci related to multi-unit batch production.
The teacher has included activities which are to encourage the use of literacy strategies; considering differentiation; and extension activities that could be for class wide use and / or for the identified gifted and talented students within the class.
The experiences have been developed to ensure that opportunity is provided to allow students to meet the *predetermined specific learning outcomes* and links to key competencies, values and other curriculum knowledge and/or skills have been made as appropriate.
These learning experiences have been described with colour highlighted links to the first part of the unit plan. The teacher wanted to clearly “spell out” links that have been made.

Diana 1/9/09 5:41 PM

Comment: Learning Intentions:
These indicate the specific learning intention or key purpose of the learning experience. These may relate to one or more learning outcomes, the key competencies, values or other curriculum knowledge and/or skills.
The teacher decided this meant the link should be made to the CoTs and the indicators of Progression as outlined in the Assessment Criteria, Lear[... [2]

Diana 1/9/09 5:40 PM

Comment: Resources:
Use this column to ensure required resources are sourced and available as needed.

Diana 1/9/09 5:41 PM

Comment: Links to Learning Outcomes:
Clear links should be made to show how the block of learning experiences relate to the predetermined learning outcomes of the unit.
The teacher also used this column to show li[... [3]

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










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<p>Setting the scene for Food Technology:</p> <p>Examine Technological Practice within a food industry example.</p> <p>This is to allow students to become aware that Technological Practice is an actual process followed by food companies when developing new products to meet an opportunity in the market place.</p> <p>Watch video sequence related to “Uncle Toby’s Chewy Muesli Bar” - an overview of Food Technology to give an understanding of Food Technology in practice.</p>	<p>Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Context specific knowledge and skills</p> <ul style="list-style-type: none"> Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products.¹ <p>Food Technology Tool box:</p> <ul style="list-style-type: none"> Exposure to real industry production processes e.g. video. 	<p>Video:</p> <p>“Developing New Food Products” -</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p>	<p>28/9/09 7:37 PM Deleted: -</p> <p>28/9/09 7:36 PM Deleted: -</p> <p>28/9/09 7:33 PM Formatted: Indent: Left: 0 mm, Hanging: 3.1 mm, Bulleted + Level: 1 + Aligned at: 6.3 mm + Indent at: 12.7 mm, Pattern: Clear (Yellow)</p> <p>28/9/09 7:33 PM Deleted: -</p> <p>Diana 1/9/09 5:54 PM Comment: Extension Activity: The grey highlights that this activity could be considered as an extension activity as individual “Planning for practice” is not a key focus other than using a variety of planning tools for reviewing and reflection. This activity could be delivered in any food technology focused Technology unit of work where planning was a key focus.</p> <p>28/9/09 7:37 PM Deleted: -</p>
<p>Extension Activity</p> <p>Case Study: Watch video sequence related to “Uncle Toby’s Chewy Muesli Bar” You may need to allow the class to watch this a few times to gather all the information required from it.</p> <p><i>Suggested Group Activity</i></p> <p>Practice in Planning – (each task could be assigned to each group in the class) Take notes on the key stages for the development of this product – explain their importance.</p> <ul style="list-style-type: none"> Identify the key resources required at each stage. Identify the different people involved in the development of the product and briefly explain their role. Identify at what key stages the food technologist’s is involved in the development of this product. 	<p>Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> Encouraging planning and reflection within the class’s technological practice within a supportive learning environment. Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Key Competencies</p> <p>Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to contribute appropriately as a group member. <p>Pedagogy</p> <p>Teaching as inquiry: Focus Inquiry:</p> <ul style="list-style-type: none"> Establishing a base line and direction to determine what my students have already learned and what they need to learn next. <p>Context specific knowledge and skills</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice beyond this unit of 	<p>Video: wider use</p> <p>“Developing New Food Products” -</p> <p>Response sheet for group response to record data from case study</p> <p>For further</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p> <p>What strategies should be considered in the event of class/group dynamics breaking down to the detriment of the students and the unit?</p> <p>How can I use group/class work to monitor learning and understanding against the indicators of progression?</p>	<p>28/9/09 7:33 PM Deleted: -</p> <p>Diana 1/9/09 5:54 PM Comment: Extension Activity: The grey highlights that this activity could be considered as an extension activity as individual “Planning for practice” is not a key focus other than using a variety of planning tools for reviewing and reflection. This activity could be delivered in any food technology focused Technology unit of work where planning was a key focus.</p> <p>28/9/09 7:37 PM Deleted: -</p>

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<ul style="list-style-type: none"> List the specific knowledge and skills has been needed by the food technologist for each stage. Identify planning tools used in the development of this product. <p>Suggested Class Activity</p> <ul style="list-style-type: none"> Use the group data collected from the video to make up a timeline to show key stages, allocation of resources for each stage including specialist people required, specific knowledge and skills required; and allocate time needed for each stage for this product to be developed within the stated time period mentioned on the video. 	<p>work.</p> <p>Food Technology Tool box:</p> <ul style="list-style-type: none"> Exposure to real industry production processes e.g. video. Introduce the 4 Ps – product, price, place, and promotion. <p>Extension Learning Outcomes:</p> <ul style="list-style-type: none"> To give students the opportunity to develop an understanding of the need for and use of planning in relation to “real life” Food Technology product development. To give students the awareness that there a lot of specialised people are involved in the development of one food product. <p>Components of Technology</p> <ul style="list-style-type: none"> Planning for practice – developing class planning with opportunities to use a variety of planning tools to manage resources and to reflect and revise for ongoing planning at key progress points. To give students’ practice in planning out key stages and allocating resources including time, people and knowledge and skill. 	<p>Extension Activity Resources</p> <p>Muesli bar Toolbox Activity.doc</p> <p>Initial Plan of Action chart.doc</p>	<p><i>Identify the key stages within Technological Practice within in a food context</i></p> <p>Unit preparation: getting ready to deliver unit: Formative assessment to form a baseline of student understandings and application of knowledge and skills</p>
<p>Introduce the unit context:</p> <p>To develop a biscuit product for production and marketing in the school environment.</p> <ul style="list-style-type: none"> Brainstorm opportunities within the school to develop opportunity. Class or group discussions to discuss opportunities and select one for the class to address. Class develop a statement related to what the selected opportunity will be. 	<p>Principles</p> <p>Inclusion: Students feel included and valued in their individual participation within the group and class environments for a common goal.</p> <p>Key Competencies</p> <p>Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to feel part of a common goal. <p>Values</p> <p>Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should to be involved and feel part of the process and have ownership of the final outcome. 	<p>Identify school events that could give opportunity to given issue</p> <p>Whiteboard for class discussion and / or paper for group discussions</p>	<p>What opportunities are there to address?</p> <p>How can I ensure learning experiences are enhanced by group/class work?</p> <p>Assessment Strategies focusing on Learning Links</p> <p>Teacher observations/ conversations with</p>

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	<p>Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. <p>Components of Technology</p> <ul style="list-style-type: none"> Brief development - develop a class description of an opportunity to address. 		<p>class/groups</p> <p>Identify an opportunity for the given context</p> <p>Assessment Strategy</p> <p>Portfolio evidence</p>
<p>Exploratory Work:</p> <p>Examine Technological Practice within an industry example using the “Gluten Free cookies” case study</p> <p>Read the resource- in groups, as a class, individually.</p> <p>Literacy Strategy</p> <p><i>Literacy strategies will need to be developed to ensure students get the most opportunity for engagement and learning from this resource. A suggested example of this is in the “Gluten Free cookie case study - literacy strategy.doc” – could be used as a homework activity to allow students the opportunity to become more familiar with the case study – the aim was to be student friendly but adapt to suit your class.</i></p> <p>Suggested key questions to meet learning intentions:</p>	<p>Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Key Competencies</p> <p>Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> To encourage reading as a means to gain knowledge and skills this with understanding can be used to enhance student practice. <p>Context specific skill/ knowledge</p> <ul style="list-style-type: none"> Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products. <p>Food Technology Toolbox</p> <ul style="list-style-type: none"> Exposure to real industry production processes <i>in relation to manufacturing a gluten free product</i> Understand the role of Gluten and its role in biscuit making Key trends – e.g. Gluten free Innovative ingredients and processes – case study on <i>Gluten Free cookie</i> Marketing requirements of packaging and labelling in relation to <i>gluten free products</i> <p>Component/s of Technology</p> <p>Characteristics of Technology:</p> <ul style="list-style-type: none"> Develop understanding of how social issues and environmental issues impact; 	<p>Sourced from the http://www.techlink.org.nz/Case-studies/Technological-practice/Food-and-Biological/Gluten-free-cookies/index.htm</p> <p>Gluten Free cookie case study - literacy strategy.doc</p>	<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p> <p>What /how can individual student evidence be presented in relation to research of technological practice to demonstrate individual student understanding and participation?</p>
<ul style="list-style-type: none"> What were the social issues that may have influenced the development of this new product? What are then environmental issues that have influenced the development of this new product? What factors/concerns had to be considered in the development of the product? What technical knowledge was important for the food technologist to understand to develop this product? 	<p>Food Technology Toolbox</p> <ul style="list-style-type: none"> Exposure to real industry production processes <i>in relation to manufacturing a gluten free product</i> Understand the role of Gluten and its role in biscuit making Key trends – e.g. Gluten free Innovative ingredients and processes – case study on <i>Gluten Free cookie</i> Marketing requirements of packaging and labelling in relation to <i>gluten free products</i> <p>Component/s of Technology</p> <p>Characteristics of Technology:</p> <ul style="list-style-type: none"> Develop understanding of how social issues and environmental issues impact; 	<p>Gluten Free cookies question and response sheet</p> <p><i>To be developed in conjunction with literacy strategies to suit class level and range of student literacy abilities using suggested key questions</i></p>	<p>Discuss what social and environmental issues influence the development of new food products.</p> <p>Identify the key stages within Technological Practice within a food context.</p> <p>Identify what technological knowledge was used in the “Gluten Free cookie” case.</p>

Diana 1/9/09 5:54 PM

Comment: Exploratory Work:
This is a key stage for any technological practice – research carried out should enable students to apply knowledge, skills and understandings from this. In this unit of work the research (Exploratory Work) is done as a class with some individual assessment opportunities.

Diana 1/9/09 5:54 PM

Comment: “Gluten Free cookies” case study:
The case study is rich in written text. Although the case study may be more suited to more able readers, the teacher decided that the resource had merit for use in a supportive learning environment. The teacher has tried to support student learning with a suggested literacy strategy. This could be refined and adapted further.

Diana 1/9/09 5:54 PM

Comment: Suggested Key Questions:
The teacher has put these key questions into the learning experiences sequence for easy reference for other teachers. These questions have been developed to specifically address CoTs and have been highlighted accordingly. A question/work sheet or resource may be developed from these key questions to meet literacy and differentiation considerations within the class.
















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<ul style="list-style-type: none"> • How did this knowledge effectively support the success of the outcome? • What manufacturing constraints were imposed on the project due to it being a gluten free product? 	<p>and how technological knowledge is validated by the success of an outcome.</p> <ul style="list-style-type: none"> • Explain that technological knowledge is evaluated in terms of how effective it is in supporting the gluten free cookie outcome to function successfully. 		<p>Explain how technological knowledge used was effective in supporting the outcome to function successfully.</p> <p>Assessment Strategy Response sheet related to Gluten Free cookie case study.</p>
<p>Extension Activity</p> <p>Class discussion using case study could explore the physical nature and functional nature of the gluten free biscuit and the relationship between the two.</p> <p>This could be done to introduce students to the terms “physical nature” and “functional nature” in relation to a biscuit product - this could then be referred to within Market Research, Brief Development and Functional Modelling learning experiences.</p>	<p>Principles Learning to learn:</p> <ul style="list-style-type: none"> • Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Characteristics of Technological Outcomes:</p> <ul style="list-style-type: none"> • <i>As a class, describe possible physical and functional nature options for a biscuit outcome within specifications when provided with a opportunity.</i> <p>Pedagogy Creating a supportive learning environment:</p> <ul style="list-style-type: none"> • Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. 	<p>For further Extension Activity Resources Cookie Toolbox Activity.doc</p>	<p>How can I use group/class work to monitor learning and understanding against the indicators of progression?</p> <p>Formative assessment <i>Gain an understanding of the physical nature and functional nature of biscuits and identify the relationship between the two.</i></p>
<p>Exploratory Work Continued:</p> <p>Examine Technological Practice within an industry example using the Cookie Time 25 years on doc.</p> <p>Literacy Strategy <i>The following resource could be used:</i> 1. <i>As an activity as outlined within Exploratory work in conjunction with the Gluten Free</i></p>	<p>Principles Learning to learn:</p> <ul style="list-style-type: none"> • Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Key Competencies Using language symbols and text: (using literacy strategies)</p>	<p>Cookie Time 25 years on.doc</p> <p>“Cookie Time 25 years on” Question and response sheet <i>To be developed in conjunction with literacy strategies to suit</i></p>	<p>Assessment Strategies focusing on Learning Links</p> <p>What strategies are most likely to help my students learn?</p> <p>What /how can individual student evidence be presented in relation to research</p>

Diana 1/9/09 5:54 PM
Comment: "Cookie Time 25 years on" doc. This resource is a simple texted case study. The teacher has suggested ways in which it could be incorporated within learning experiences.

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<p><i>cookie case study;</i></p> <p>2. <i>As an ongoing case study to be referred back to within Market research or Functional Modelling;</i></p> <p>3. <i>Instead of the Gluten Free cookie case study as a literacy strategy with less reading content but with useful knowledge to add to student's "toolbox";</i></p> <p>4. <i>As an extension activity only.</i></p>	<ul style="list-style-type: none"> To encourage reading as a means to gain knowledge and skills this with understanding can be used to enhance student practice. 	<p><i>class level and range of student literacy abilities using suggested key questions.</i></p>	<p>of technological practice to demonstrate individual student understanding and participation?</p>
<p>Suggested key questions to meet learning intentions:</p>	<p>Context specific skill/ knowledge</p> <ul style="list-style-type: none"> Develop technological knowledge, skills and understandings related to technological practice from analysing existing technological practice and products. Develop knowledge and skills in recipe formulation for functional modelling and prototyping related to biscuit making. 		<p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside the classroom situation.</p>
<ul style="list-style-type: none"> What was the opportunity in the market that the first Cookie Time cookie product addressed? 	<p>Food Technology Toolbox</p>		
<ul style="list-style-type: none"> Testing out things is functional modelling – what advice does Michael Mayell have related to this? 	<ul style="list-style-type: none"> Exposure to real industry production processes in relation to manufacturing a gluten free product Manipulation of Ingredients <ul style="list-style-type: none"> - making and shaping biscuits 		<p>Identify what technological knowledge was used.</p>
<ul style="list-style-type: none"> What does Michael Mayell say about the way each cookie is shaped? 	<p>Component/s of Technology</p>		
<p>The Original Chocolate Chip cookie recipe hasn't changed for 25 years!</p>	<p>Technological products:</p>		
<ul style="list-style-type: none"> So what is Cookie Time's success based on? How did the Cookie Time cookie get manipulated into its shape? 	<ul style="list-style-type: none"> Describe examples related to biscuit making to illustrate how a technological product's fitness for purpose can be/was enhanced by the way a material was shaped. 		<p>Explain how that technological knowledge used was effective in supporting the outcome to function successfully.</p>
<ul style="list-style-type: none"> Explain why do you think the Cookie Time Brand is iconic in New Zealand? 	<p>Characteristics of Technology</p> <ul style="list-style-type: none"> Explain that technological knowledge is evaluated in terms of how effective it is in supporting the cookie outcome to function successfully. 		
<ul style="list-style-type: none"> What are the techniques used to: <ul style="list-style-type: none"> - get the size of the cookie? - get the chunky chocolate size? 			
<p>"Cookie Time cookies are still individually hand crafted like they were in the old days."</p>			
<ul style="list-style-type: none"> What affect will this have on a batch of these cookies? 			

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<ul style="list-style-type: none"> • Why does the company NOT make uniform cookies? • How has the Cookie Time Cookie’s fitness for purpose been enhanced by the way the cookie was shaped? • What disadvantages do you think there may be in adopting Cookie Time’s approach to shaping and chocolate chip distribution? • What advantages do you think there may be in adopting Cookie Time’s approach to shaping and chocolate chip distribution? • Explain what you think we should do in developing our biscuit outcome? 			<p>Assessment Strategy <i>Response sheet related to Case study snapshot - “Cookie Time 25 years on”</i></p>
<p>Preplanning: The Big 3 in Technology Practice</p> <p>If there is the opportunity for a technologist to visit through teacher networks such as Futureintech Visit from it could be this part of the unit could be used to discuss Food Technology and what are the 3 parts to Technological Practice:</p> <ul style="list-style-type: none"> - Technology (product, process, package) - Market (competitors, current products) - Consumer (stakeholder needs, wants, opportunities) <p>Suggested class activity</p> <p>Re-watch the video sequence related to “Uncle Toby’s Chewy Muesli Bar”.</p> <p>Give students the opportunity to identify what stages of the product develop process was related to these three parts.</p>	<p>Principles Inclusion:</p> <ul style="list-style-type: none"> • Students feel included and valued in their individual participation within the group and class environments for a common goal. <p>Key Competencies Participating and contributing:</p> <ul style="list-style-type: none"> • Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/or failure of the outcome will affect everyone involved. <p>Values Community and participation for the common good:</p> <ul style="list-style-type: none"> • The whole class should to be involved and feel part of the process and have ownership of the final outcome. 	<p>http://www.futureintech.org.nz</p> <p>Video: “Developing New Food Products” -</p> <p>Develop understandings of Technological Practice in product development to meet an opportunity in a food context outside</p>	<p>Is there time to use introduce or return to teaching about the big 3 of Technology practice? Could a food technologist be brought in for a visit to make it “real”? Is it worthwhile for the focus of the unit? Would as activity ensure students felt they had contributed to the planning of the project?</p>

Diana 1/9/09 5:54 PM

Comment: The Big 3 in Technology Practice:
Although multi-unit batch production is the main focus for this unit, this activity was part of the original unit of work. The teacher decided it was important to keep this in the learning experiences so students were aware that Technological Practice within Food Technology can be focused around these 3 parts. The teacher has continued using these as key stages for the development of the class outcome.

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<p>Class discussions about the need for research around these 3 parts to contribute to the class outcome development.</p> <p>Suggested questions for class to discuss might include:</p> <ul style="list-style-type: none"> To develop our outcome what do we already know in relation to Technology, Market and Consumer? To develop our outcome what do we need to find out in relation to Technology, Market and Consumer? What tasks/ activities may this include? 		<p>Whiteboard for class discussion and / or paper for group discussions</p>	<p>the classroom situation.</p> <p><i>Identify the key stages within Technological Practice within a food context.</i></p>
<p>Planning for Technological Practice</p> <p>Suggested group activity</p> <p>To give students the opportunity to contribute to planning for the class project rather than all teacher driven</p> <ul style="list-style-type: none"> Suggest some key stages we need to plan for in developing our outcome? Suggest what resources we will need to plan for to use in developing our outcome? Suggest what people will need to be involved and when? <i>Suggest what finance will be needed, where will it come from, how will this be used.</i> How much time will we need to allocate to each key stage? Gather information back for group discussions from the spokesperson of the group. <p>Collate the data as a class with the intent for the teacher to put it together as an initial plan for the development of the outcome to address the selected opportunity.</p> <p>There are other strategies that may work better</p>	<p>Component of Technology</p> <p>Planning for practice: (Working towards)</p> <ul style="list-style-type: none"> As a class, select and use planning tools to identify and record key stages, actions to be undertaken, determine progress review points, and manage resources. <p>Why should the teacher collate and make up the initial plan?</p> <p>This should show the students that not only is their input required but that it is valued, relevant and necessary for the teacher to develop the initial plan for the class to use and implement. It</p>	<p>Whiteboard for class discussion and / or paper for group discussions</p>	<p>As a class identify key stages and resources which need to be planned for.</p> <p>Assessment Strategies focusing on Learning Links:</p> <p>Peer and self assessment related to how students:</p> <p>Relate to others Participation and</p>

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Comment: Planning For Technological Practice:
As this is a class activity the teacher decided that to develop a plan of action for the class was the best and less time consuming way to encourage students to review and reflect on class practice.

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<p>for the teacher and the class dependent on the ability and makeup of the class.</p> <p>Present initial <i>plan of action</i> for development of the outcome to address the selected opportunity.</p> <p>This could be a brief opportunity to explain that the Plan of Action used is one type of planning tool that can be used for initial planning. Ask for suggestions of other ways to present initial planning of a project.</p> <p>Suggested group activity:</p> <p>Give out <i>plan of action</i> for students to check whether it has the detail provided in the preplanning activities by each group – additions, deletions, time concerns, resource allocation? Discuss where the progress points should be established for reviewing and reflection.</p> <p>Linking to the case study technological practices explored so far ask for reasons for reviewing and reflection in sound technology practice.</p> <p>Discuss ways the initial plan can be used by each student to record reviews and reflection of technological practice for ongoing planning.</p> <p>Ask for suggestions of other planning tools students could use during the project to present evidence of reviews and reflection of technological practice for ongoing planning.</p> <p>Give students other planning tool examples and samples that they could use throughout project.</p> <p>Planning to be revised and checked out throughout Technological Practice. Key decisions should be noted using individually chosen planning tools.</p>	<p>should also show the students that the project is important to the teacher and is part of the project too.</p> <p>Planning stages should reflect the big 3 in technology practice such as Market research, Consumer Research, Technology Research,</p> <p>Principles Learning to learn:</p> <ul style="list-style-type: none"> Encouraging planning and reflection within the class’s technological practice within a supportive learning environment. Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Values Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should be involved and feel part of the process and have ownership of the final outcome. <p>Key Competencies Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/ or failure of the outcome will affect everyone involved. <p>Component of Technology</p>	<p><u>Initial Plan of Action chart.doc</u></p> <p>Teacher could provide other planning tools which have been developed by the teacher to scaffold student practice. – student should initiate choice of planning tools.</p> <p>E.g. Short statements related to Plan (what did we plan to do); Review (what did we do how did it go?); Reflect (What did we/I learn?); Revise (Do we need to do something differently? Any changes to plan? – This could be done each period or the end of each week or at each identified progress point indicated on initial plan</p> <p>Using annotated photographs -</p>	<p>contribution Creating a supportive learning environment</p> <p>Use an initial plan developed from this information and other planning tools to record reviews and reflection of technological practice for ongoing planning.</p> <p>Unit progress: delivering the unit – how is it going? Learning to learn: Checking individual student evidence of planning and revision. Encourage to use planning tools that suit them.</p> <p>What /how can individual student evidence be presented in relation to planning for practice, functional demonstrate individual student understanding and participation?</p> <p>Unit progress: delivering the unit – how is it going? Creating a supportive learning environment</p>
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	<p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p> <p>Planning for practice:</p> <ul style="list-style-type: none"> As a class, select and use planning tools to identify and record key stages, actions to be undertaken, determine progress review points, and manage resources. 	<p>what is happening in the photo, what did we learn from this, what will we do now?</p> <p>Templates for planning / reflective journals.</p> <p>Planning tools ideas created by Individual students.</p>	<p>Learning enquiry: Losing student interest? Overloading student learning? Time left?</p> <p>Teacher observations of individual students within a supportive learning environment:</p> <p>Learning to learn: Using the knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work.</p> <p>Assessment Strategy Portfolio evidence</p>
<p>Market Research</p> <p>Activities should be planned within initial planning</p> <p>These will depend on the selected opportunity to be addressed. Market research could include the examination of existing products to gain information on such things as; attributes, size, colour, shape, ingredients used packaging, nutritional information, labelling, price per unit.</p> <p>Suggested class/group activities could include:</p> <ul style="list-style-type: none"> Carry out a CMP on range of Cookie Time Cookies products – e.g. Gluten free Cookie, Smart Cookie, Rookie Cookie and Big Cookie from Cookie Time. 	<p>Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. <p>Key Competencies</p> <p>Participating and contributing:</p> <ul style="list-style-type: none"> To contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; <p>Context specific skill/ knowledge</p> <ul style="list-style-type: none"> Develop technological knowledge, skills 	<p>“Cookie Time” products <u>Disassembly of food products doc.</u></p> <p><u>Results sheet for disassembly of a food product doc.</u></p> <p><u>Comparing CMP. doc.</u></p> <p><u>Sensory testing method doc.</u></p> <p><u>Attributes test doc.</u></p>	<p>Carry out Market Research on existing biscuit products.</p> <p>Develop knowledge and skills related to “The Food Technology Toolbox” in setting up and carrying out product and sensory testing.</p> <p>Gain an understanding of the physical nature and functional nature of biscuits and identify the relationship between the two.</p>

Diana 1/9/09 5:54 PM
Comment: Market Research:
One of the Big 3 in Food Technology. The teacher wanted to ensure students learnt about what activities might occur within this key stage.

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<ul style="list-style-type: none"> Carry out a disassembly test on each product – related to chocolate chunks per biscuit, texture of biscuit – crumb feel, identification of ingredients within biscuit – e.g. sugar. Carry out a sensory evaluation. Carry out an attribute test on each product. Identify what attributes are common to all. Make up an attributes test for the four products to identify where each cookie product fits along the continuum line for each attribute. Within class/group discussions consider whether Cookie Time has been successful in developing cookie products with similar or same attributes they developed for the original “Big Cookie”. <p>Colour Testing</p> <ul style="list-style-type: none"> Match the biscuit product to the most similar colour on the chart. Take a photo of each with a label identifying the product being tested. Evaluate which product best meets “In Specification”. Is it the same product the focus group liked the best for its appearance? 	<p>and understandings related to technological practice from analysing existing technological practice and products.</p> <ul style="list-style-type: none"> Develop knowledge and skills in testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing. <p>Components of Technology</p> <ul style="list-style-type: none"> Technological products - investigate and analyse existing biscuit products to develop understanding that in selecting ingredients performance properties must align with the desired performance specifications for that product. <p><i>(Developing skills and knowledge of testing procedures)</i></p> <ul style="list-style-type: none"> Technological modelling - use of testing procedures and prototyping for ongoing refinement of biscuit outcome and to ensure its suitability for multi unit production 	<p>Sensory descriptors doc.</p> <p>sensory tests - variety.doc.</p> <p>Sensory Attributes Testing doc.</p> <p>Product Colour Testing chart</p> <p>- Develop a colour test chart using paint chart samples to show in specification and out of specification related to colour - light to dark.</p> <p>Labels Digital Camera</p> <p>For more information related to colour testing see Toolbox support material</p> <p>Provide photos of activity from Digital Camera</p>	<p>Describe the attributes of existing products in relation to in the chocolate chip cookie range to develop desirable attributes for the class outcome.</p>
<p>If this is beyond budget limitations consider other biscuit products in the chocolate chip range or products related to the opportunity the class has selected to address.</p>	<p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>		<p>Assessment Strategy</p> <p>Portfolio evidence to show individual reviewing and reflection using planning tools.</p>
<p>Encourage students to record how Market Research went. Write evaluative comments about what they learnt from doing this activity.</p>			
<p>Consumer Research</p> <p>Activities should be planned within initial planning</p> <p>These will depend on the selected opportunity to</p>	<p>Principles Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can be “stored as a toolbox” for future application within student practice and beyond this unit of work. 	<p>Cookie Time products AND / OR Varieties of commercially</p>	<p>Who will be the stakeholders for consultation and feedback? Decided by class or teacher or selected opportunity?</p>

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Comment: Consumer Research:
One of the Big 3 in Food Technology. The teacher wanted to ensure students learnt about what activities might occur within this key stage.

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<p>be addressed. Authentic key stakeholders from the identified opportunity to address or people for whom the product will be targeted at (within the school environment) could be used to gather information related to the desirable attributes for the outcome. Other options are to use the class as the focus group –perhaps mix up the groups so students will have to work with others – appoint a focus group leader to direct the discussions?</p>	<ul style="list-style-type: none"> Encouraging planning and reflection within the class’s technological practice within a supportive learning environment. <p>Inclusion:</p> <ul style="list-style-type: none"> Students feel included and valued in their individual participation within the group and class environments for a common goal. 	<p>made packets of chocolate chippie biscuits</p>	<p>Develop knowledge and skills related to the “Food Technology Toolbox” in surveying and gathering useful information from focus group discussions and key stakeholders.</p>
<p>Suggested class/group activities could include:</p>	<p>Key Competencies Participating and contributing: Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/ or failure of the outcome will affect everyone involved.</p>	<p><u>Sensory descriptors doc.</u> For describing words for sensory attributes.</p>	<p>Carry out Consumer Research with key stakeholders and focus groups.</p>
<p>For focus group discussion and sensory testing.</p>	<p>Values Community and participation for the common good:</p>	<p><u>Sensory attributes chart doc.</u></p>	<p>Will promotion, packaging and labelling be addressed?</p>
<p>Comparison Cookie Time cookies OR other Chocolate chippie biscuits products OR a mixture of BOTH –</p>	<ul style="list-style-type: none"> The whole class should to be involved and feel part of the process and have ownership of the final outcome. 	<p><u>sensory tests - variety.doc.</u></p>	
<ul style="list-style-type: none"> Other brands may include Griffins, Budget, Farmhouse, and/or brands that make a big cookie product. 	<p>Integrity:</p> <ul style="list-style-type: none"> Involving students being responsible, accountable and act ethically within group/s and class activities; and within the stakeholder/ market environment. 	<p>Plates Glasses of water for each person</p>	
<p>Within groups discuss the look of the products, packaging and labelling, taste the products, - take photos as you carry out the session.</p>	<p>Context specific knowledge and skills</p>	<p>Digital Camera</p>	
<p>Use a <i>selection</i> of sensory test methods to give students experience carrying out sensory testing.</p>	<ul style="list-style-type: none"> Develop knowledge and skills in testing methods to establish and test desirable attributes - product analysis, sensory and storage and product testing. Develop knowledge and skills in authentic stakeholder consultation, focus group discussions and feedback analysis. 	<p>Plates Glasses of water for each person</p>	
<ul style="list-style-type: none"> These are informal discussions, but have focused questions available for each group, e.g. Which packaging appeals the most? What labelling informs you the best? What biscuit product do you like the look of? What product smells the best? 	<p>Components of Technology Technological modelling - use of testing procedures and prototyping for ongoing refinement of biscuit outcome and to ensure its suitability for multi unit production.</p>	<p>Digital Camera</p>	
<p>What product has the nicest mouth feel texture? What product tastes the best? What are the desired attributes you like in a chocolate chippie biscuit? Which best fits your ideal? What biscuit type and attributes do you want to address the opportunity?</p>		<p>Develop a response sheet for focus group question lead- ins</p>	<p>What strategies should be considered in the event of class/group dynamics breaking down to the detriment of the students and the unit?</p>
<p>If you have been able to use authentic key stakeholders or target market stakeholders for this</p>			

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<p>activity gain feedback on what attributes and type of biscuit they would like for the biscuit outcome to address the opportunity. Or use class to identify these.</p> <p>Class discussion wrap-up of the focus group activity for feed back analysis</p> <ul style="list-style-type: none"> What did you find out from your focus group activity in relation to existing biscuit products? What type of biscuit do they want? What desirable attributes are required for our outcome? <ul style="list-style-type: none"> Encourage students to record how Consumer Research went. Write evaluative comments about what they learnt from doing this activity. 	<p>Aim: To get information on consumer consensus and product composition.</p> <p>Key Competencies Relating to others:</p> <ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>	<p>Provide photos of activity from Digital Camera</p>	<p>Assessment Strategies focusing on Learning Links: Teacher observations of individual students within a supportive learning environment: Community and participation for the common good: Integrity:</p> <p>Assessment Strategy Portfolio evidence to show individual reviewing and reflection using planning tools.</p>
<p>Brief Development</p> <p>As a class write a conceptual statement to address the opportunity.</p> <p>Brief has a Conceptual Statement that... "Identifies the target market and purpose of the product (i.e. for school events)."</p> <p>As a class: <u>Scaffolding for learning activity:</u></p> <p>Use the information about one of the Cookie Time products e.g. Gluten free cookie; to develop specifications from the identified attributes and sensory evaluation and product tests e.g. Colour test.</p> <p>This is to give students guidance on how to write specifications to describe a product.</p> <p>Include: product's appearance including size, shape, colour, size of chocolate chunks-</p>	<p>Components of Technology</p> <p>Brief development - develop a class description of the biscuit outcome, including a need or opportunity to address, a conceptual statement, and key attributes defined into performance specifications that reflect authentic stakeholder feedback.</p> <ul style="list-style-type: none"> As a class, establish a conceptual statement that justifies the nature of the biscuit outcome and why the biscuit outcome should be developed. <p>Key Competencies Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> To encourage reading as a means to gain knowledge and skills this with understanding can be used to enhance student practice. <p>Pedagogy Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Students learn best when they feel accepted and when they are able to be active, visible members of the learning community. 	<p>Folio evidence or class activity work for reference material.</p>	<ul style="list-style-type: none"> Develop, from this research, specifications which may include possible physical and functional nature options for the intended outcome to address the identified opportunity. <p>What type of biscuit will be the class focus to develop for multi- unit batch production?</p> <p>Will promotion, packaging and labelling</p>

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<p>distribution of these, number of chunk; smell; texture – mouth feel and hand feel, taste.</p> <p>Packaging and labelling if this will be considered in final outcome.</p> <p>Individual activity:</p> <p>Students to write specifications for the biscuit outcome using the information gathered from the feedback analysis on attributes required for the biscuit outcome – remind students that these can be general at first and can be refine later as we develop the outcome through prototyping and functional modelling. Specifications <i>may include possible physical and functional nature options</i></p>	<p>Brief Development</p> <ul style="list-style-type: none"> Establish the specifications for a biscuit outcome based on the nature of the outcome required to address the need or opportunity, and informed by key stakeholder considerations. <p>Specifications can be measured and allow evaluation of final prototype or product. Brief will be revised throughout Technological Practice when and if necessary through ongoing consultation with representative key stakeholders (Focus Group).</p>	<p>be addressed?</p> <p>Unit progress: delivering the unit – how is it going?</p> <p>Creating a supportive learning environment</p> <p>Learning enquiry:</p> <p>Losing student interest? Overloading student learning? Time left?</p> <p>Assessment Strategy</p> <p>Portfolio evidence of class identified opportunity and final conceptual statement with individually detailed specifications provided within developed brief, including possible physical and functional nature options for the biscuit outcome.</p>
<p>Conceptual Development – functional modelling</p> <p>Review and trial existing recipes.</p> <p>Carry out the making and trialling of existing recipes in pairs/groups then perform a sensory attributes test on each sample in comparison to the class desirable attributes</p> <p>Recipes used will depend on developed conceptual statement and desirable attributes developed from stakeholder feedback.</p>	<p>Key Competencies</p> <p>Relating to others:</p> <ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> Give students the opportunity to confidently read and interpret recipes to develop quality outcomes. <p>Values</p> <p>Community and participation for the common good:</p>	<p>Equipment for biscuit making including mixing bowls, flat baking sheets, baking paper, hand-held electric beaters, airtight storage containers</p> <p>Ingredients for biscuit making – consider bulk buying from local foods wholesaler</p> <p>Should students source recipes independently from home and other available resources e.g. library, internet? Or will these be done by the teacher?</p> <p>Unit progress: delivering the unit – how is it going?</p> <p>Creating a supportive learning environment</p> <p>Learning enquiry:</p>

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Comment: Conceptual Development:
This key stage relates to Technological Knowledge and Technological Practice.

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<p><u>Suggested practicals could include:</u></p> <ul style="list-style-type: none"> • Variety of chocolate chippie biscuit recipes; • Toll house cookies; • Brownies. 	<ul style="list-style-type: none"> • The whole class should be involved and feel part of the process and have ownership of the final outcome. <p>Integrity:</p> <ul style="list-style-type: none"> • Involving students being responsible, accountable and act ethically within group/s and class activities; • Excellence: <p>To encourage students to aim high and to persevere in the face of difficulties in developing a quality outcome fit for purpose.</p>	<p>e.g. chocolate chips</p> <p>Chocolate chip cookies doc.</p>	<p>Losing student interest? Overloading student learning? Time left?</p>
<p>Samples kept: sealed in airtight containers for each recipe batch, labelled and stored securely for testing next lesson.</p>		<p>Biscuit recipe/books</p> <p>Internet access for recipe research</p>	<p>Demonstrate an understanding of the safe use of equipment, hygienic handling of ingredients and test samples and ethical practices in food production to meet codes of practice.</p>
<p>Samples of each given out to each of the groups for testing attributes comparing to desirable attributes sought.</p>	<p>Context specific knowledge and skills</p> <ul style="list-style-type: none"> • Develop knowledge and skills in recipe formulation for functional modelling and prototyping related to biscuit making. • Develop safe, hygienic, ethical practices in developing a biscuit outcome. 		
<p>Sensory Attribute Tests done in class groups.</p>			
<p>Samples kept for product testing such as Colour and Storage testing</p>	<p>Food Technology Toolbox</p> <ul style="list-style-type: none"> • Build cooking skills - making and shaping biscuits <p>Formulating Techniques</p> <ul style="list-style-type: none"> • Simple recipe changes driven by refined specifications of developed brief related to ingredients/ process – for multi-unit batch production for a biscuit outcome • Understand processing steps required to make common food products e.g. sieving, beating, creaming, baking (basic cooking terminology) • Basic properties of food introduced within practical tasks <p>– <i>discussion around these – physical nature and functional nature of biscuits</i></p>		<p>Develop skills biscuit making.</p> <p>Demonstrate knowledge and skills from the “Food Technology Toolbox” in setting up and carrying out product and sensory testing.</p>
<p>Develop skills in biscuit making in particular:</p> <ul style="list-style-type: none"> • Creaming; • Measuring; • Ball forming; • Uniform sizing. 			
<p>4-5 recipes selected with evaluating notes on suitability related to brief.</p>			
<p>Class decide on 2-3 recipes that best suit the brief.</p>			<p>Assessment Strategies focusing on Learning Links: Teacher observations of individual students within a supportive learning environment:</p>
<p>Trial these 2-3 recipes again</p>			<p>Using language symbols and text:</p>
<p>Samples kept: sealed in airtight containers for each recipe batch, labelled and stored securely for testing next lesson.</p>	<p>Ethics of a Food Technologist</p> <ul style="list-style-type: none"> • Current ethical issues – ethics in relation to multi-unit production and selling a biscuit product in the school environment <p>Food Safety</p> <ul style="list-style-type: none"> • Basic Personal Hygiene and Food Handling practices reinforced • Simple storage testing 		<p>Community and participation for the common good:</p>
<p>Samples of each given out to each of the groups for testing attributes comparing to desirable attributes sought.</p>			<p>Integrity:</p> <p>Learning to learn:</p>

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



<p>Class discussion as to which best meets the desirable attributes to address the opportunity and why.</p> <p>Present samples to key stakeholders with class' recommendations and reasons why for final decision on their ideal recipe to address the opportunity.</p> <p>Brief specifications can be revised if necessary after the final decision has been made.</p> <p>Encourage students to record how Concept Development went. Write evaluative comments about what they learnt from doing this activity.</p>	<ul style="list-style-type: none"> Simple attribute testing – related to key desirable attributes <p>Instrumental Testing</p> <ul style="list-style-type: none"> Colour <p>Components of Technology</p> <p>Technological modelling:</p> <ul style="list-style-type: none"> As a class, discuss examples of prototyping used to explain how evidence gathered provided justification for evaluating a technological outcome as fit for purpose or in need of refinement. <p>Outcome development and evaluation - develop a marketable biscuit prototype through idea generation, modelling, stakeholder feedback, and use the information gained to select and develop the biscuit outcome that best addresses the specifications.</p> <p>Outcome development and evaluation:</p> <ul style="list-style-type: none"> As a class, undertake functional modelling to develop biscuit recipe ideas into a conceptual design for a biscuit that addresses the specifications. <p>Brief development - develop a class description of the biscuit outcome, including a need or opportunity to address, a conceptual statement, and key attributes defined into performance specifications that reflect authentic stakeholder feedback.</p> <p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>		<p>Teacher conversations with class / group / individual</p> <p>To encourage:</p> <p>Excellence: Observations made and comments given to class and individuals to encourage improvement in skills</p> <p>Assessment Strategy</p> <p>Portfolio evidence to show individual reviewing and reflection using planning tools.</p>
<p>Technology Research</p> <p>Watch the video “Biscuit making” -Mass Production of Food –“Arnott’s” Biscuits.</p>	<p>Principles</p> <p>Learning to learn:</p> <ul style="list-style-type: none"> Introducing knowledge and skills which can 	<p>Video: “Biscuit making” -Mass Production of Food –“Arnott’s”</p>	<p>Develop knowledge and skills from the “Food Technology Toolbox” and</p> <p>The teacher decided that the best place to do this key stage was just before the development of the outcome for multi-unit production as most of the learning activities are related to Technological systems. Other units of work may have this nearer to the other Big 3 parts -after Planning for practice.</p>

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





Comment: Technology Research:
One of the Big 3 in Food Technology. The teacher wanted to ensure students learnt about what activities might occur within this key stage.

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<p>The class may need to watch it several times to get all the information.</p>	<p>be “stored as a toolbox” for future application within student practice and beyond this unit of work.</p>	<p>Biscuits.</p>	<p>Component of Technological Systems within of: HACCP, batch production, flow sheeting, the role of properties (inputs and outputs) in subsetting; and control requirements in a production process in multi-unit batch production.</p>
<p>Suggested activities: Individual or group work</p> <ul style="list-style-type: none"> Identify the stages of production Identify the inputs needed for each stage. Identify the outputs desired at each stage. Identify the control points needed – e.g. time temperature, testing. 	<p>Key Competencies Using language symbols and text: (using literacy strategies)</p> <ul style="list-style-type: none"> Introduce students to the use of flow sheeting in developing a system for a multi-unit batch production process for a biscuit outcome. 	<p>HWT - Flow Process.doc (for ice cream)</p>	<p>Assessment Strategies focusing on Learning Links: Teacher observations of individual students within a supportive learning environment:</p>
<p>Individually or in pair/groups complete the work sheet on ice cream flow process to gain understanding of a flow process.</p>	<p>Context specific knowledge and skills</p> <ul style="list-style-type: none"> Develop knowledge, skills and understandings of HACCP and production processes for food production. 	<p>Chocolate chippies production flow control points doc.</p>	<p>Using language symbols and text: Community and participation for the common good: Integrity:</p>
<p>Using the information identified from the video students are to develop a flow chart similar to the chocolate chippie production flow for this information. This should include control points.</p>	<p>Food Technology Toolbox Manufacturing Processes</p> <ul style="list-style-type: none"> Exposure to real industry production processes e.g. video/ in relation to biscuit making Develop a detailed block diagram with control points Understand processing steps required 	<p>Develop a literacy resource to support information from food legislation.doc And code of ethics.doc</p>	<p>Learning to learn:</p>
<p>Use supporting resources to give students the opportunity to gain some understanding of food legislation and ethics which will impact on control points for food manufacturing.</p> <p>Use supporting resources to give students the opportunity to gain some understanding of HACCP which will impact on control points for food manufacturing.</p>	<p>Components of Technology</p> <ul style="list-style-type: none"> Technological systems - to understand that control mechanisms can work in ways to enhance the fitness for purpose of technological systems by maximising the desired outputs and minimising the undesirable outputs. Also to understand that interfaces between subsystems have an important role in enabling the technological system to work effectively as a whole. 	<p>HACCP for food lab.doc</p>	<p>Identify the differences between homemade and multi-unit batch production to evaluate the importance of sameness of product related to such things as: creaming thoroughness, colour, size, uniformity, ingredient evenness (e.g. chocolate chips ratio per biscuit)</p>
<p>Class discussion</p> <p>Identify the differences between homemade and multi-unit batch production to evaluate the importance of sameness of product related to such things as: creaming thoroughness, colour, size, uniformity, ingredient evenness (e.g. chocolate chips ratio per biscuit) when attempting multi-unit batch production within the class</p>	<p>Technological systems:</p> <ul style="list-style-type: none"> Explain how processes are controlled to enable the inputs to be transformed to outputs. As a class, describe examples to illustrate how a technological system’s fitness for purpose was enhanced by the use of control 	<p>HWT - HACCP for Ice cream.doc</p>	<p>as: creaming thoroughness, colour, size, uniformity, ingredient evenness (e.g. chocolate chips</p>

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<p>environment. Individual student activity</p> <p>Using knowledge and skills students are to develop their own flow process for multi-unit batch production of the final recipe for trialling.</p> <p>Suggested Peer assessment activity</p> <ul style="list-style-type: none"> • These flow processes could be checked by peer assessment for omissions and or corrections to develop a flow process that the whole class can agree on. • Each groups chose the one that best reflects a good flow process for multi-unit batch production. • The teacher could decide which one is used for the final process. <p>Encourage students to record how Technology Research went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>mechanisms.</p> <ul style="list-style-type: none"> • As a class or in groups, identify subsystems within technological systems and explain their properties. <p>Key Competencies</p> <p>Relating to others:</p> <ul style="list-style-type: none"> • Give students the opportunity to work effectively together to develop a quality marketable outcome. • Introduce students to the use of flow sheeting in developing a system for a multi-unit batch production process for a biscuit outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> • Give students the opportunity to feel part of a common goal; to contribute appropriately as a group member; to make connections with others and to create opportunities for others in the group; to understand that the success and/ or failure of the outcome will affect everyone involved. <p>Components of Technology</p> <p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>	<p>ratio per biscuit) when attempting multi-unit batch production within the class environment. Demonstrate knowledge and skills in developing a production process to allow multi-unit batch production of biscuits to occur within the classroom environment.</p> <p>Assessment Strategy Individual/pair process flow developed</p> <p>Assessment Strategies focusing on Learning Links:</p> <p>Peer and self assessment related to how students:</p> <p>Relate to others: Participation and contribution: Creating a supportive learning environment:</p> <p>Assessment Strategy Portfolio evidence</p>
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<p>Prototype Development</p> <p>Purchase Test - To see if product is consumer suitable to evaluate against brief.</p> <p>Each group makes a batch of biscuits according to developed flow process which may include colour tests, ingredient, time, temperature checks.</p> <p>It may be important to do this more than once to get the multi- unit batch production process as correct as possible.</p> <p>Brief specifications can be revised if necessary after the final decision has been made.</p> <p>Encourage students to record how Prototype Development went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Principles</p> <p>Inclusion:</p> <ul style="list-style-type: none"> Students feel included and valued in their individual participation within the group and class environments for a common goal. <p>Key Competencies</p> <p>Relating to others:</p> <ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Using language symbols and text</p> <ul style="list-style-type: none"> Give students the opportunity to confidently read and interpret recipes to develop quality outcomes. Introduce students to the use of flow sheeting in developing a system for a multi-unit batch production process for a biscuit outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to feel part of a common goal; to understand roles and responsibilities; to contribute appropriately as a group member; to understand that the success and/ or failure of the outcome will affect everyone involved. <p>Values</p> <p>Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should to be involved and feel part of the process and have ownership of the final outcome. <p>Integrity:</p> <ul style="list-style-type: none"> Involving students being responsible, accountable and act ethically within group/s and class activities; during the manufacturing process; and within the stakeholder/ market environment. <p>Excellence:</p> <ul style="list-style-type: none"> To encourage students to aim high and to persevere in the face of difficulties in developing a quality outcome fit for purpose. 	<p>Equipment for biscuit making including mixing bowls, flat baking sheets, baking paper, hand-held electric beaters, airtight storage containers</p> <p>Ingredients for biscuit making – consider bulk buying from local foods wholesaler e.g. chocolate chips</p> <p>Final recipe and multi-unit batch production process</p>	<ul style="list-style-type: none"> Trial a developed production process in multi-unit batch production to deliver a quality assured outcome. Demonstrate an understanding of the safe use of equipment, hygienic handling of ingredients and test samples and ethical practices in food production to meet codes of practice. <p>Who will take on which roles in the multi-unit batch production?</p> <p>Assessment Strategies focusing on Learning Links: Teacher conversations with class/group/individual To encourage: Excellence:</p>
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<p>Presentation of Final Prototype</p> <p><u>Class activity</u></p> <p>Design questions suitable for survey to test suitability of prototype. – to target market /focus groups/key stakeholders . Survey should be written in a simple way with clear questions to gain information.</p> <p>Questions may include:</p> <ul style="list-style-type: none"> Whether people would buy the cookie; What much would they be prepared to pay for the cookie? <p>Students to carry out surveys using sample biscuits made in multi-unit batch production trial.</p> <p>Gather in survey and analyse them in class.</p> <p>Decision Time Is the biscuit outcome ready for commercialization i.e. ready to be made for a school event?</p> <p>Encourage students to record how Presentation of Final Prototype went. Write evaluative comments about what they learnt from doing this activity.</p>	<p>Context specific knowledge and skills</p> <ul style="list-style-type: none"> Develop, test and carry out a multi-unit batch production process for a biscuit outcome to ensure quality assurance – same quality product every time. Work together as a class to develop a product which is of a marketable quality through multi-unit batch production. <p>Components of Technology</p> <ul style="list-style-type: none"> Outcome development and evaluation - develop a marketable biscuit prototype through idea generation, modelling, stakeholder feedback, and use the information gained to select and develop the biscuit outcome that best addresses the specifications. <p>Outcome development and evaluation:</p> <ul style="list-style-type: none"> As a class, produce and trial a biscuit prototype of the outcome. <p>Technological systems - to understand that control mechanisms can work in ways to enhance the fitness for purpose of technological systems by maximising the desired outputs and minimising the undesirable outputs. Also to understand that interfaces between subsystems have an important role in enabling the technological system to work effectively as a whole.</p> <p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>	<p>Develop a survey to suit purchase test questions</p>	<p>Do our stakeholders wish us to continue with multi-unit batch manufacture to meet the opportunity?</p> <p>Can we manufacture and market our developed product?</p> <p>Will we implement the final product within intended situation?</p> <p>Will promotion, packaging and labelling be addressed? Who will do this?</p> <p>Can/should/do we need to carry out a cost analysis? Is it profitable for fundraising?</p> <p>Assessment Strategy Portfolio evidence</p>
<p>Evaluation of Trialled Prototype to brief:</p> <p><u>Class discussion</u></p> <p>Class and group discussions to develop</p>	<p>Principles Learning to learn:</p> <ul style="list-style-type: none"> Encouraging planning and reflection within the class’s technological practice within a supportive learning environment. <p>Key Competencies Relating to others:</p>		<p>Provide an evaluation to state compliance and deficits of the biscuit prototype against specifications and</p>

Diana 1/9/09 5:55 PM
Comment: At this point within this unit, Negotiated Outcomes related to implementing the final product with marketing, packaging, labelling and selling in the intended environment would need to be seriously considered, in relation to: time left, effect on teaching programme, resources, such as budget required ,and most importantly whole class willingness to continue.

Technology Learning Area	Context Specific Skill/Knowledge	Negotiated Outcomes
Principles	Technological Practice (CoT)	Assessment Strategies
Key Competencies	Technological Knowledge (CoT)	Literacy Strategies
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<p>evaluative statements related:</p> <ol style="list-style-type: none"> To measure against how issue is solved, opportunities met; To measure against specifications to evaluate its fitness for purpose; To comment on viability of production of to address opportunity; To the future of the product. <p>Encourage students to record an individual evaluation to the brief. Write evaluative comments about what they learnt from doing this activity.</p>	<ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. <p>Participating and contributing:</p> <ul style="list-style-type: none"> Give students the opportunity to feel part of a common goal; to understand that the success and/ or failure of the outcome will affect everyone involved. <p>Values Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should to be involved and feel part of the process and have ownership of the final outcome. <p>Components of Technology Outcome development and evaluation</p> <ul style="list-style-type: none"> Evaluate the fitness for purpose of the final biscuit outcome against the specifications. <p>Planning for practice - class planning with opportunities to use a <i>variety of planning tools</i> to manage resources and to reflect and revise for ongoing planning at key progress points.</p>	<p>Develop a response sheet for groups to record evaluative comments against the specifications of the brief?</p>	<p>stakeholder and consumer feedback on its suitability with suggestions made to eliminate deficits.</p> <p>Assessment Strategies focusing on Learning Links:</p> <p>Peer and self assessment related to how students:</p> <p>Relate to others: Participation and contribution: Creating a supportive learning environment:</p> <p>Assessment Strategy Portfolio evidence</p>
<p>So Where To From Here?</p> <p>Get students to do a unit assessment.</p>	<ul style="list-style-type: none"> Will we implement the final product within intended situation? Consideration for selling products – area, furniture, money collection, hygiene procedures –gloves, sanitiser, aprons? <p>Values Community and participation for the common good:</p> <ul style="list-style-type: none"> The whole class should to be involved and feel part of the process and have ownership of the final outcome. <p>Key Competencies Relating to others:</p> <ul style="list-style-type: none"> Give students the opportunity to work effectively together to develop a quality marketable outcome. 	<p>Develop a unit assessment for students to fill out.</p>	<p>Unit reflection: Creating a supportive learning environment:</p> <ul style="list-style-type: none"> Did students feel accepted and able to be active, visible members of the learning community? <p>Learning enquiry:</p> <ul style="list-style-type: none"> What has happened as a result of the teaching and what are the implications for future teaching? Is there something I need to change? What are the next steps for learning?

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