UNIT PLAN

UNIT TITLE: *The Language of a Design Brief – Hygienic Household Storage*		
Year: *12*	**Curriculum Level:** ***7***	**Duration:** *6 lessons*

NZC Values	How students will be encouraged to develop the selected values in this unit
Excellence (aim high, persevere in the face of difficulties) **Innovation, inquiry & curiosity** (think critically, creatively and reflectively) **Diversity** (culture, language & heritage) **Equity** (fairness & social justice) **Community and participation** (for the common good) **Ecological sustainability** (includes care for the environment) **Integrity** (honest, responsible, accountable and acting ethically)	*Within this unit of work students will be encouraged to consider traditional Māori storage methods, as well as consider sustainable materials. They will develop their ability to inquire into the needs of others in order to develop useful solutions to problems. There will be high expectations communicated to all students so that they engage in their learning with integrity and in the pursuit of excellence. The literacy scaffolding planned in this unit will also have the aim of ensuring that all students are enabled to understand the requirements of their internal assessment task and have the best chance of success.*

NZC Key Competencies	How students will be encouraged to develop the selected competencies in this unit
Thinking **Using language, symbols & texts** **Managing self** **Relating to others** **Participating and contributing**	*Within this unit of work students will incorporate all of the Key Competencies. Students will be engaging with the literacy requirements of their internal assessment task and will be expected to think deeply about their learning. They will need to participate and contribute to whole class and small group work. They will also need to manage themselves to ensure that they complete required tasks in a timely manner. Due to the topic of this unit, students will engage in the development of empathy towards the needs of others. This will also be important when working in a group to complete tasks.*
Tātaiako Competencies	**How students will be encouraged to develop the selected competencies in this unit**
Ako **Wānanga** **Whanaungatanga** **Manaakitanga** **Tangata Whenuatanga**	*Within this unit of work students will engage in reciprocal learning relationships between teachers and other students. Students will be given opportunities to further develop their understanding of traditional Māori practices and increase their vocabulary in Te Reo Māori.*

Curriculum Achievement Objectives (or NCEA Standards)

This mini unit is designed to introduce students to the vocabulary and language required to create a design brief. It is designed to support students' engagement with the Technology Curriculum strand, Technological Practice:

Brief Development: *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Outcomes / Intentions

Students are able to access and communicate ideas in subject-specific texts.

Students can:

- *Understand the language and vocabulary of a design brief*
- *Use the language of design to create a brief*
- *Understand traditional Māori practices and related kupu to inform their design brief*

Differentiation

How will I meet the needs of diverse learners throughout this unit?

Meeting the needs of able learners	*Able learners will be challenged to act in the role of tuakana to others within the class. They will also have opportunities for extension, such as providing a justification of why an alternative solution to the example problem is not useful.*
Meeting the needs of students requiring additional support	*Students requiring additional support will be encouraged to use other students, as well as the teacher for help.* *Students will also be working in small groups to provide a mechanism for this support.* *The literacy tasks are highly scaffolded to ensure those needing support will have the tools and materials needed to support their engagement with the learning tasks.* *Modified materials will be provided to ensure learning is at an appropriate level.* *Kat will be engaging with a similar task, but aimed at Level 2 of the same curriculum area. The modifications to her program are written in each lesson plan.*

Assessment

Diagnostic **How I will find out what students already know**	Formative **How I will feedback and feed forward (next steps?)**	Summative **How I will assess what students have learned**
Students will share their prior knowledge of brief development during the first lesson. This will help inform future lessons.	*Students will demonstrate their growing understanding during their completion of each learning task. This will inform the lessons that follow.*	*Students will complete Achievement Standard 91354 following this unit of work.*

ICT Integration to Enhance Learning

• e-Portfolio • Video eg. Youtube, Clickview • PowerPoint • Publisher • MovieMaker • Voicethread	• Ultranet (LMS) • Blog • Wiki • Digital Camera • Video/Flip Camera • Digital Voice Recorder	• Word/Google Docs • Other

Resources	Key Vocabulary
Internal Assessment Task *Devices* *Access to Netflix – Baking Impossible* *Episode 1* *Google Classroom* *Google Doc "do now" template* *Key Vocabulary matching cards* *Task sheets* *Twisties* *2 simple drawings* *Copies of readings* *Google Slide template*	*Brief* *Fit for purpose* *Intervention by design* *Brief development* *Need or opportunity* *Conceptual statement* *Specifications* *Physical attributes* *Functional attributes* *Iterative process* *Physical environment* *Social environment* *Stakeholder feedback*

Unit Outline	
Timing	**Sequence of Teaching and Learning Activities** **(NZC P34-35 for general principles)**
Lesson 1	Students will read a text that explains traditional Māori hygienic storage solutions. They will read the text in a small group of 5 people and utilise a reciprocal reading technique. Students will pay particular attention to what they can learn from traditional methods and apply to their designs, as well as kupu that links to this topic. Students will create a glossary of relevant kupu in Te Reo Māori.
Lesson 2	Students will produce a slide in their group that explains the traditional storage method to add to a class slide show. They will also produce a slide with a glossary of relevant kupu to grow their vocabulary in Te Reo Māori.
Lesson 3	Ascertain prior knowledge regarding brief development. Introduction to Unit and the issues of hygienic storage in a house to use a prompt for thinking about the Internal Assessment. Students will read the Assessment Task and highlight key vocabulary that is contained in the task. Students will play card matching games to link the words and definitions. Students will begin to create a glossary of key vocabulary which will be continually developed each lesson.
Lessons 4	Students will engage in a reverse design brief activity. Students will create an imagined design brief for the “finger guard” product in order to confirm an understanding of definitions of key vocabulary and to apply the definitions to create an example in context.
Lesson 5	Students will gain an understanding of open and closed questions. Students will identify whether question examples are open or closed. They will then change the closed questions identified to open questions. Students will then engage in an activity where they are trying to replicate a drawing that the teacher has in front of them, by asking only closed questions. They will then attempt to replicate a second drawing that the teacher has in front of them, by asking only open questions. Students will engage in a discussion regarding what they notice as the pros and cons of these different questioning techniques and how this relates to gathering stakeholder feedback in relation to their brief development.
Lesson 6	Students will engage in the close reading of a model paragraph, justifying the “finger guard” solution to “cheesy fingers”. They will pay particular attention to the linking language contained in a justification paragraph; …because; …therefore; …as a result; …consequently. Students will then write their own paragraph, to justify an alternative solution to the “cheesy fingers” problem using the model paragraph as a guide.

Unit Evaluation

Identified strengths/identified weaknesses/overall changes

Internal Assessment Resource

Achievement Standard Technology 91354: Undertake brief development to address an issue

Resource reference: Technology 2.1B v2

Resource title: Hygienic Household Storage

Credits: 4

Achievement	Achievement with Merit	Achievement with Excellence
Undertake brief development to address an issue.	Undertake in-depth brief development to address an issue.	Undertake comprehensive brief development to address an issue.

Student instructions

"A study by the National Sanitation Foundation (NSF) found that toothbrush holders are the third-most germy household items (behind dish sponges and kitchen sinks)."

(Source: https://www.onhealth.com/content/1/toothbrush_germs_facts)

Introduction

This assessment activity requires you to develop a brief for an outcome that addresses an issue that you have identified, related to "hygienic household storage".

Upon completing this activity, you will submit:

- your final brief
- evidence of the decisions you made in the brief development process. You may provide this through a portfolio or other means, as agreed with your teacher.

You will be assessed on how comprehensively your brief describes your outcome and addresses the issue and the need or opportunity.

You will not be required to create your outcome as part of this assessment activity.

This is an individual task. You have 8 weeks of in and out-of-class time to complete it.

Task

Develop a brief

A brief consists of:

- A conceptual statement that communicates what is to be done and why.
- Specifications that describe the outcome and that need to be met for the outcome to be judged as "fit for purpose".

1. Develop a conceptual statement

- Identify and justify your issue, need or opportunity, and outcome.
  - Explore the “hygienic household storage” context and identify an issue.
  - Determine a need or opportunity derived from this issue.
  - Decide on your outcome and explain the purpose of the outcome.
- Undertake development work that reflects:
  - ongoing consideration and prioritisation of the social and physical environment where the outcome will be developed and used
  - the available resources
  - the needs and preferences of key and wider stakeholders.
- Write the final conceptual statement. Use the ideas and information you have gathered to describe what will be done and why it will be done.

Because this is an iterative process, you will need to go back and re-address earlier decisions as your knowledge of the issue and outcome develops.

2. Develop specifications

- Identify and describe the physical and functional requirements (the attributes) of the outcome. Explain why they have been identified. Include images, models, and sketches if appropriate. Consider:
  - where the outcome will be developed and finally situated or used
  - social, ethical, cultural, legal, political, or economic factors
  - historical factors that may influence the outcome
  - future trends that may impact upon the outcome
  - relevant knowledge bases, for example, graphic design, hard material manufacturing
  - ongoing feedback from key and wider community stakeholders
  - available resources.
- Conduct further research and testing and modify the descriptions of your outcome’s attributes as required. Keep a record of the evidence of the results and modifications.
- Compile your final specifications list. Make sure your specifications are measurable.

Assessment schedule: Technology 91354

Hygienic Household Storage

Evidence/Judgements for Achievement	Evidence/Judgements for Achievement with Merit	Evidence/Judgements for Achievement with Excellence
The student has undertaken brief development to address an issue. The student: ● identifies an issue related the context, for example: *Many businesses choose not to make custom storage solutions because it's not profitable. However, I've discovered that by considering the materials used, it is possible to create custom storage solutions that are reasonably priced.* ● determines a need or portunity derived from the issue and sociated stakeholders, for example: *My family needs a hygienic way of storing our toothbrushes. The key stakeholders are the members of my family.* ● reflects ongoing nsideration of the social and ysical environment where the tcome will be developed and uated and ongoing stakeholder nion, for example: *Our bathroom has a modern minimalistic look with white walls, grey lino, and a white vanity. My mum said the outcome must fit this look.* ● describes the outcome to developed and explains why such outcome should be developed, for ample: *My family needs a more hygienic way to store our toothbrushes as there is often an unhygienic liquid that forms at the bottom of our toothbrush holder.* ● explains the physical and ctional attributes required for an tcome, for example: *The toothbrush holder will need to be able to store toothbrushes for each member of my family and should be made from a material that can be easily cleaned.*	The student has undertaken in-depth brief development to address an issue. The student: ● identifies an issue related the context, for example: *Many businesses choose not to make custom storage solutions because it's not profitable. However, I've discovered that by considering the materials used, it is possible to create custom storage solutions that are reasonably priced.* ● determines a need or portunity derived from the issue and sociated stakeholders, for example: *My family needs a hygienic way of storing our toothbrushes. The key stakeholders are the members of my family.* ● reflects ongoing nsideration and prioritisation of the cial and physical environment ere the outcome will be developed d situated and ongoing key and der stakeholders feedback, for ample: *Our bathroom has a modern minimalistic look with white walls, grey lino, and a white vanity. My mum said the outcome must fit this look and be functional for our requirements. My teachers suggested that my design idea was going to be too complicated to clean as often as needed.* ● describes the outcome to developed and explains why such outcome should be developed, for ample: *The toothbrush holder will need to be able to store toothbrushes for each member of my family and should be made from a material that can be easily cleaned.*	The student has undertaken comprehensive brief development to address an issue. The student: ● identifies an issue related the context, for example: *Many businesses choose not to make custom storage solutions because it's not profitable. However, I've discovered that by considering the materials used, it is possible to create custom storage solutions that are reasonably priced.* ● determines a need or portunity derived from the issue and sociated stakeholders, for example: *My family needs a hygienic way of storing our toothbrushes. The key stakeholders are the members of my family.* ● reflects ongoing nsideration and prioritisation of the cial and physical environment ere the outcome will be developed d situated and ongoing key and der stakeholders feedback, for ample: *Our bathroom has a modern minimalistic look with white walls, grey lino, and a white vanity. My mum said the outcome must fit this look and be functional for our requirements. My teachers suggested that my design idea was going to be too complicated to clean as often as needed. .* ● describes the outcome to developed and justifying why such outcome should be developed, for ample: *The toothbrush holder will need to be able to store toothbrushes for each member of my family and should be made from a material that can be easily cleaned. The toothbrush holder should allow for*

● produces a final brief mprised of a conceptual statement d specifications, for example: *The conceptual statement talks about a modern look, hygienic toothbrush storage solution that will suit the room. One of the specifications is that the toothbrush storage must be no bigger than 10cm x 15cm x 12cm.*	● explains the physical and ıctional attributes required for an tcome, for example: *The toothbrush holder will need to be made with a surface that doesn't get marked by various bathroom liquids, cosmetics and cleaning products. It will have a modern finish and simple lines.* ● produces a final brief mprised of a conceptual statement d specifications, for example: *The conceptual statement talks about a modern look, hygienic toothbrush storage solution that will suit the room. One of the specifications is that the toothbrush storage must be no bigger than 10cm x 15cm x 12cm.*	*frequent cleaning to be hassle free.* ● explains the physical and ıctional attributes required for an tcome, for example: *The toothbrush holder will need to be made with a surface that doesn't get marked by various bathroom liquids, cosmetics and cleaning products. It will have a modern finish and simple lines.* ● justifies the specifications elation to the physical and ıctional attributes required of the tcome, for example: *The coffee table needs to be 140x70x38 as that will be big enough to house the things we want it to and will also fit into the space.* ● produces a final brief mprised of a conceptual statement d specifications, for example: *The conceptual statement talks about a modern look, hygienic toothbrush storage solution that will suit the room. One of the specifications is that the toothbrush storage must be no bigger than 10cm x 15cm x 12cm.*

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standard.

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** ***1***
Year Level: *12*	**Date:** *14th March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn:

- *about traditional Māori methods for hygienic storage and the kupu associated with these methods.*

Success Criteria:

Students can:

- *read a text explaining traditional Māori storage methods*
- *explain a Māori method for storage*
- *explain the design decisions and their link to hygiene*
- *understand specific kupu (vocabulary) in Te Reo Māori that relates to storage and explain their meaning*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internals assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct understanding of a text. The text read relates to traditional Māori practices.	*4 different texts regarding traditional methods of Māori food storage* *Reciprocal reading role cards.* *Devices and Google Classroom Glossary Template*

Inclusive practice/differentiation

Students will support each other in the reading of their text by utilizing the reciprocal reading method. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will join a group and be part of this activity, supported by other students.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room.	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.*	*10 minutes*
Learning Intention will be shared and the Success Criteria co-constructed. *Teacher will inform the students that the internal assessment task is going to require thinking about hygienic storage methods. Today they will engage with a text that explains traditional Māori methods of storage. This will be useful when they consider possibilities and reasons for potential solutions to the problem they identify when they engage with their internal assessment task.* *Students will be placed in groups of 5 and will be given one of 4 texts. They will engage in the reciprocal reading process, alternating leaders:* 1. *Predicting* 2. *Reading* 3. *Clarifying* 4. *Questioning* 5. *Summarising*	*Students will be provided with the text that their group will engage with.* *The 4 text options are:* *Pōhā: A Clever Way of Storing Food by Dr Michael Stevens* *Traditional Food Storage* *https://teara.govt.nz/en/maori-foods-kai-maori/page-2* *Storehouses on piles* *http://nzetc.victoria.ac.nz/tm/scholarly/tei-BucTheC-t1-g1-t2-body1-d3-d9.html* *Traditional Kumara Curing and Storage* *Via Crop & Food Research* *www.panui.org.nz* *They will be given reciprocal reading cards.* *Teacher will circulate during this time to ensure that clarification can be given as needed to students.*	*35 minutes*
Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.*		

Students will begin a Te Reo Māori Kupu section in an online glossary template that they have been provided with on Google Classroom and will add 3 kupu as well as their meaning to this document.
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?

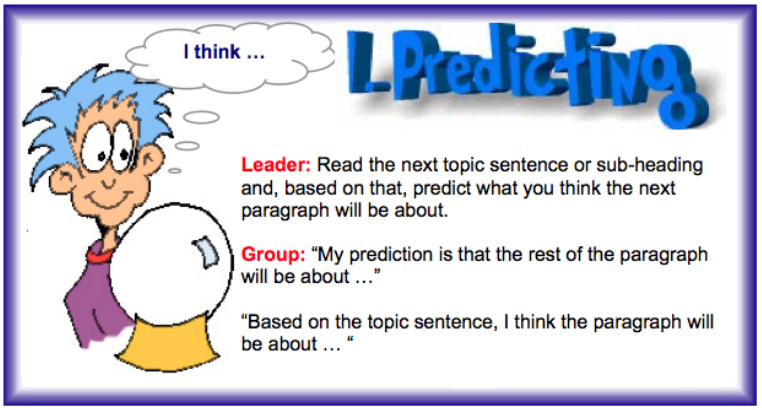
Traditional Hygienic Storage

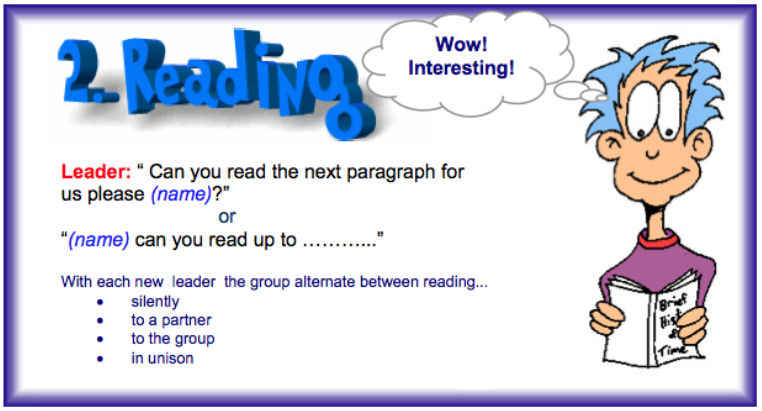
LI: I am learning about traditional Māori methods for hygienic storage and the kupu associated with these methods.

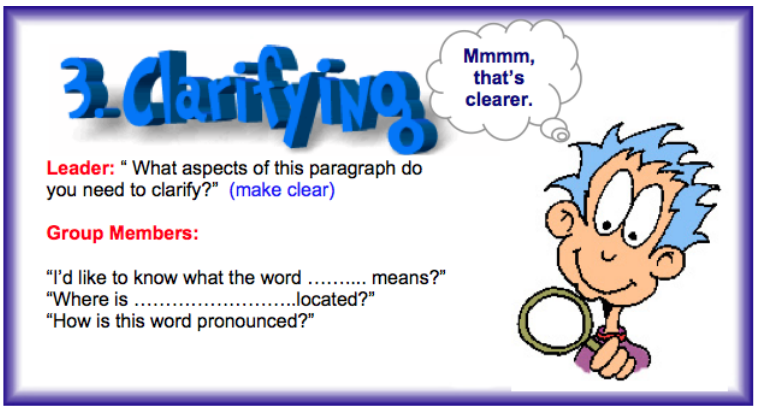
Success Criteria:

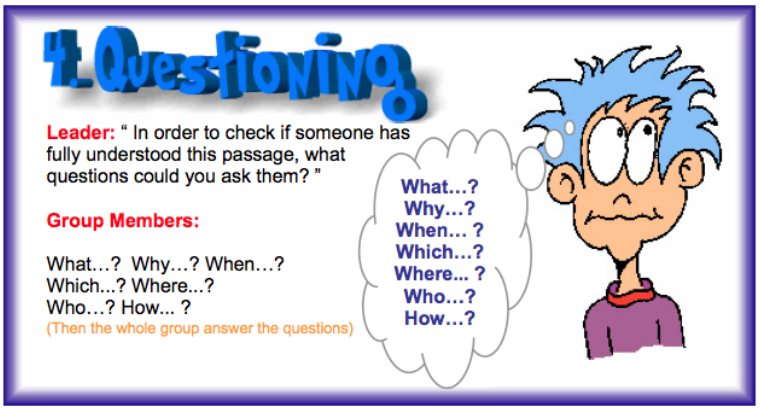
- *I can read a text explaining traditional Māori storage methods*
- *I can explain a Māori method for storage*
- *I can explain the design decisions and their link to hygiene*
- *I can understand specific kupu (vocabulary) in Te Reo Māori that relates to storage and explain their meaning.*

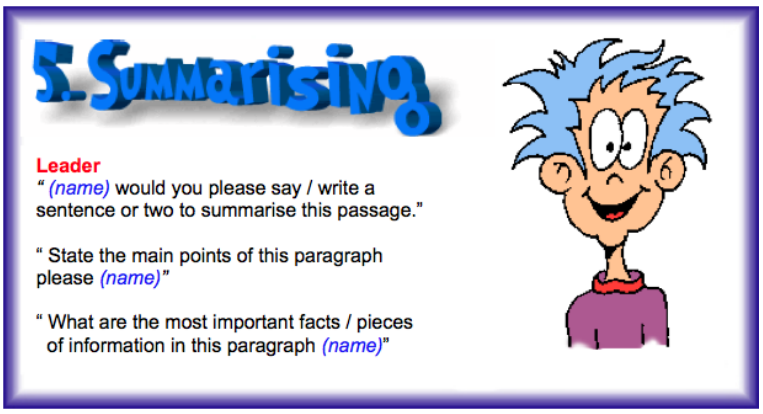
As a group, read the text that you have been given, using the Reciprocal Reading technique. The group decides on a leader to begin.











Source of cards:
https://sites.google.com/a/whauvalley.school.nz/wvs-room-13/reading-and-writing/reciprocal-teaching

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** ***2***
Year Level: *12*	**Date:** *15th March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn:

- *about traditional Māori methods for hygienic storage and the kupu associated with these methods.*

Success Criteria:

Students can:

- *explain a Māori method for storage, based on my reading of a text*
- *explain the design decisions and their link to hygiene*
- *explain specific kupu (vocabulary) in Te Reo Māori that relates to storage and explain their meaning*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internal assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct understanding of a text. The text read relates to traditional Māori practices.	*4 different texts regarding traditional methods of Māori food storage* *Access to a device and Google Slides and Glossary*

Inclusive practice/differentiation

Students will support each other in sharing their understanding of their text. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will continue to work with the group she was a part of and join in this activity, supported by other students.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room. *Students will each begin with a "do now" task of writing the definition of 3 more key kupu in their online Glossary.*	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.* *Students will need access to a device and the Glossary template will be in the Google Classroom.*	*10 minutes*
Learning Intention will be shared and the Success Criteria co-constructed. *Teacher will remind students that the internal assessment task is going to require thinking about hygienic storage methods. Today they will create a slide that can be added to a class Google Slide presentation where they explain a traditional Māori Food Storage method.* *They will also add Te Reo Māori kupu that they came across in their diary on another slide to enable the creation of a shared class Glossary.*	*Students will continue to engage with the text they worked with in the previous lesson.* *These 4 text options are:* *Pōhā: A Clever Way of Storing Food by Dr Michael Stevens* *Traditional Food Storage https://teara.govt.nz/en/maori-foods-kai-maori/page-2* *Storehouses on piles http://nzetc.victoria.ac.nz/tm/scholarly/tei-BucTheC-t1-g1-t2-body1-d3-d9.html* *Traditional Kumara Curing and Storage* *Via Crop & Food Research www.panui.org.nz* *They will create their slides using the template available to them in Google Classroom.* *Teacher will circulate during this time to ensure that clarification can be given as needed to students.*	*35 minutes*

Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.* *Students will add another 3 kupu as well as their meaning to their own Te Reo Māori Glossary document.*
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** ***3***
Year Level: *12*	**Date:** *16th March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn to:

- *identify and understand key vocabulary that relates to learning tasks and assessment*

Success Criteria:

Students can:

- *identify the key vocabulary within brief development to help them to unpack the requirements of their internal assessment*
- *give definitions of key vocabulary as it relates to their internal assessment*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internals assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct knowledge of vocabulary	*Access to TV and Episode 1 of "Baking Impossible" on Netflix* *Internal Assessment Task* *Highlighter* *Key Vocabulary Matching Cards*

Inclusive practice/differentiation

Students will support each other in the vocabulary matching activity. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will do a similar task but will be engaging the assessment task that she will be working towards which is at Level 2 of the curriculum. The key vocabulary matching activity for her will contain the vocabulary that she will encounter in her assessment.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room. *Students will engage in a "do now" task of review the slide of another group from the previous lesson in order to grow their knowledge of hygienic storage solutions and materials and adding 3 more kupu to their Glossary.* *Students will watch the first and last parts of episode 1 of "Baking Impossible". They will be instructed to pay particular attention to the brief that the contestant were given and the success or otherwise of the contestants meeting that brief.*	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.* *Students will need access to a device and the Glossary template will be in the Google Classroom.* *Students will need to be able to see the screen. Clear timings of parts of the episode to be viewed will be noted to ensure that time is not wasted.* *Students will be asked…* *"What was the brief"* *"How did contestants know if they had been successful in meeting the brief?"* *"Why is a brief important?"*	*15 minutes*
Learning Intention will be shared and the Success Criteria co-constructed. *Students will be reminded that they are about to embark on a new learning focus: Brief Development. They will be reminded that each subject has key vocabulary that it is important to understand so that they can better understand their learning and the assessment requirements.* *Students will be given the Internal Assessment Task and will be asked to identify key subject-specific vocabulary that they think will be important to understand in order to experience success in their learning and assessment.*	*Students will need a copy of the internal assessment task and highlighters.* *Teacher will circulate during this time to ensure that*	*10 minutes*

	clarification can be given as needed to students.	
Students will share the key vocabulary that they have identified and offer possible definitions, with clarification given by the teacher if needed. Any additional vocabulary not identified by students will be shared by the teacher as well as definitions.	*Teacher will ensure that a range of students have the opportunity to share as this will provide an opportunity for formative assessment regarding student's prior knowledge.*	*10 minutes*
Students will engage in a matching activity of key vocabulary and definitions.	*Students will need a set of matching cards in pairs.* *Teacher will circulate during this time to ensure that clarification can be given as needed to students.*	*10 minutes*
Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.* *Students will write down on a post-it note one of the key vocabulary that they think they need to particularly learn prior to the next lesson and give this to the teacher with their name on it as they exit the class. This will be followed up on at that start of the next lesson.*		
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?		

Key Vocabulary Linked to Brief Development – Matching Cards

Brief	*A statement that provides a guide to design and develop a fit for purpose, successful outcome. It guides the design thinking processes and is a core element of 'intervention by design'; the essence of Technology education.*
Fit for purpose	*Well-equipped or well suited for its designated role or purpose*
Intervention by design	*To create prototypes to provoke real world action and intervene in human behavior*
Brief development	*An authentic, iterative, and very personal, and ever evolving, dynamic process. Because of this, the approach can look different as the designer brings their individual personalities and approaches to iteratively refine it, describing and justifying the outcome that is being developed.*
Need or opportunity	*Identifying an authentic need or opportunity may take some research and careful analysis of the context. If exploration throws up a number of possible needs or opportunities, the technologist needs to select one that offers scope for technological development and then justify their choice.* *The brief should clearly describe an outcome that will meet the need or realise the opportunity, taking into account the physical and social environment in which it will be situated/used.*
Conceptual statement	*Describes what is involved; the 'who, what, where, when and why'. It is based on the findings from the research and investigation a student carries out into the problem, need, or issue.*
Specifications	*The various requirements that must be met if the outcome is to be judged as "fit for purpose". These requirements relate to the outcome's physical and functional natures (what is wanted in terms of appearance, performance, and so on). They should be measurable.*

Physical attributes	*The product's appearance or "what it looks like"* *Attributes are broad descriptors – relative, not measurable. They can mean different things to different people.*
Functional attributes	*How a product performs or "what it can do"* *Attributes are broad descriptors – relative, not measurable. They can mean different things to different people.*
Iterative process	*Brief development is not a one-off exercise, completed at the beginning of a project. A brief continues to be developed and refined throughout the life of a project in response to ongoing research, consultation with stakeholders, technological modelling, changing constraints or circumstances, reflection and evaluation, and the technologist's own developing practice.*
Physical environment	*The spaces where the outcome will be developed and finally located. Factors to be considered include area, topography, temperature, lighting, wind, weather, noise, nearby objects/features, and hazards.*
Social environment	*The complex of human factors – for example, ethical, cultural, political, economic – that will influence the acceptability and viability of the outcome when placed in its destined location.*
Stakeholder feedback	*Receiving feedback from people who are likely to be the key users of the product or service in order to refine the product or service to better meet their needs. When seeking feedback, technologists choose a medium to communicate the brief (for example, oral, written, or visual). The medium should be chosen to make the process is as straightforward as possible for stakeholders while eliciting the required feedback.*

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** *4*
Year Level: *12*	**Date:** *18th March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn to:

- *define and apply key vocabulary related to brief development*

Success Criteria:

Students can:

- *explain the meaning of key words and concepts that related to brief development*
- *apply the word or concept to a real-world situation to show deeper understanding of the word and concept by creating my own example*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internals assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct knowledge of vocabulary	*Reverse Brief Task* *Key Vocabulary Matching Cards*

Inclusive practice/differentiation

Students will support each other in the reverse brief task. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will do a similar task but will be engaging with the key vocabulary for her modified assessment task, providing definitions and examples of these vocabulary.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room. *Students will each begin with a "do now" task of writing the word that they had chosen to focus on following the previous lesson and writing the definition for this in their online Glossary. This will add an additional section to their glossary which will be continually created and used throughout the unit of work.*	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.* *Students will need access to a device and the Glossary template will be in the Google Classroom.*	*10 minutes*
Students will be given a packet of twisties to eat (a similar snack will be available for others with specific dietary needs). *Students will be instructed that whilst they eat the snack they should be considering any problems that arise.*	*Packets of twisties and alternative snacks will be ready for students.* *Instructions will be given prior to giving the snacks to students.*	*5 minutes*
Students will share back problems that they noted. It is hoped that at least one student will identify "cheesy fingers" as being a problem. *Learning Intention will be shared and the Success Criteria co-constructed.* *Students will be introduced to the "finger guard" product that was created to solve the problem of "cheesy fingers" they will be reminded that any product that is created to solve a problem would have gone through a process of brief development.* *Students will be reminded of the key components of brief development and the associated vocabulary. They will engage in a reverse brief development process for "finger guards in order*	*Students will be provided with the Reverse Brief Task Sheet.* *Students will still have access to the vocabulary matching cards from the previous lesson for support in defining the vocabulary.* *Teacher will circulate during this time to ensure that*	*30 minutes*

to ensure their ability to define key vocabulary and provide an example from the "finger guard" product.	*clarification can be given as needed to students.*	
Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.* *Students will decide on another 2 key vocabulary to add to their online glossary.*		
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?		

Reverse Brief Development
to Confirm Understanding of Key Vocabulary

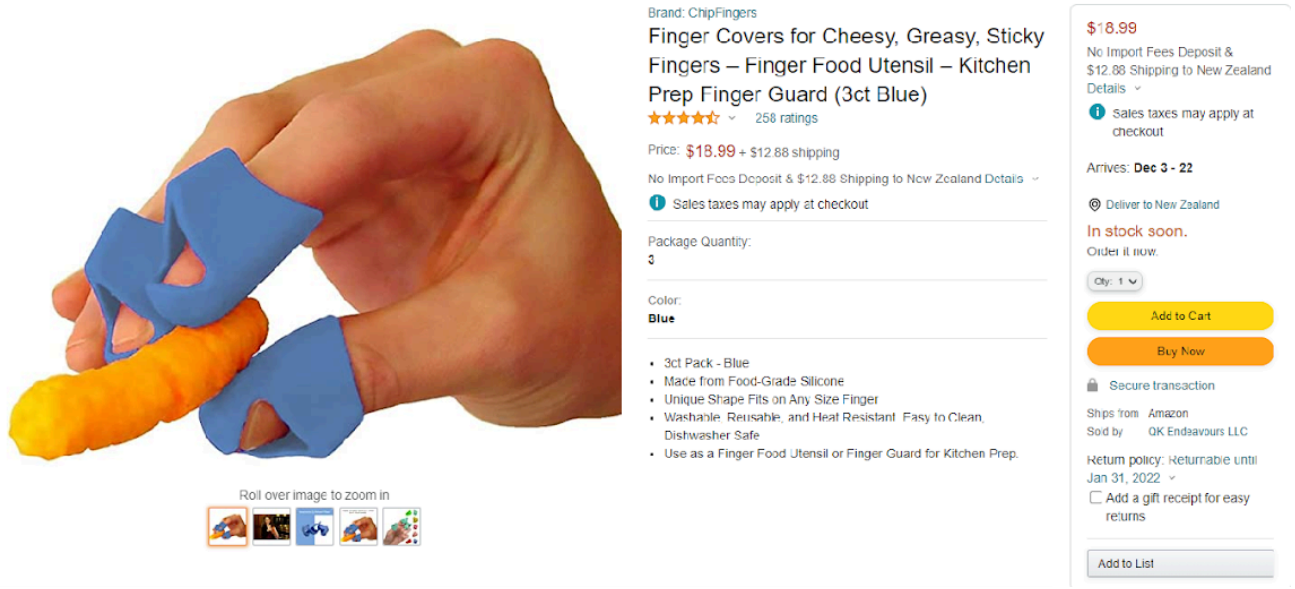
LI: to define and apply key vocabulary related to brief development

Success Criteria:

- *I can explain the meaning of key words and concepts that related to brief development*
- *I can apply the word or concept to a real-world situation to show deeper understanding of the word and concept by creating my own example*

To help build your deep understanding of the key vocabulary that relates to brief development, you will engage in a "reverse brief development" activity.

Here is a real product that is for sale on Amazon.



Source:
https://www.amazon.com/Finger-Covers-Cheesy-Greasy-Fingers/dp/B072FH9YD9/ref=sr_1_5?keywords=finger+covers&qid=1563225219&s=home-garden&sr=1-5&th=1

The creators of this product would have gone through a brief development process prior to this product being brought to the market for sale. Imagine what this brief would have included. Write a definition for the key vocabulary in the brief development process and then use the "Finger Guards" product to create an example of this vocabulary in context.

Key Vocabulary	*Definition*	*Example using the Finger Guards*
Need or opportunity		
Conceptual statement		
Specifications		
Physical attributes		
Functional attributes		
Physical environment		
Social environment		
Stakeholders		

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** *5*
Year Level: *12*	**Date:** *21st March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn to:

- *understand open and closed question techniques*

Success Criteria:

Students can:

- *explain the difference between open and closed questions*
- *explain the pros and cons of open and closed questions*
- *correctly identify open and closed questions*
- *use open and closed questions*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internals assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct understanding and use of the variety of question types	*Open and Closed Question Types* *Open and Closed Question Task* *2 simple drawings*

Inclusive practice/differentiation

Students will support each other in the Open and Closed question task. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will do a similar task but will supported by her Teacher Aide in identifying question types. She will not be required to rewrite closed questions as open questions.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room. *Students will each begin with a "do now" task of writing the definition for 2 more key vocabulary in their online Glossary.*	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.* *Students will need access to a device and the Glossary template will be in the Google Classroom.*	*10 minutes*
Learning Intention will be shared and the Success Criteria co-constructed *Teacher will explain the importance of understanding Closed and Open Questions with students. Teacher will brainstorm with students the pros and cons of closed and open questions. Teacher will supplement student contributions to ensure clear understanding of these question types and the benefits or otherwise.*	*Teacher will ensure that a range of students have the opportunity to share as this will provide an opportunity for formative assessment regarding student's prior knowledge.*	*10 minutes*
Students will engage in a receptive and productive vocabulary activity where they identify whether various questions linked to the "cheesy finger" problem are closed or open. If the question is closed they will need to rewrite the question as an open question.	*Students will be provided with the Open and Closed Questions Task Sheet.* *Teacher will circulate during this time to ensure that clarification can be given as needed to students.*	*10 minutes*
Teacher will have 2 simple drawings that students will be challenged to replicate. For the first drawing the students will only be allowed to ask closed questions and for the second drawing the students will only be allowed to ask open questions. *Following the activity students will be asked to reflect on what they noticed about the benefits and challenges during each drawing replication*	*2 simple drawings will be ready for use in the activity.* *Teacher will ensure that a range of students have the opportunity to share as this will provide an opportunity for formative assessment regarding student's growing understanding.*	*15 minutes*

process when only one question type was allowed. This will be linked to the importance of questioning when gaining stakeholder feedback in the brief development process.		
Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.* *Students will email teacher with an open and closed question regarding their upcoming internal assessment task in order to further check understanding of question types.*		
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?		

Open and Closed Questions

LI: to understand open and closed question techniques

Success Criteria:

- *I can explain the difference between open and closed questions*
- *I can explain the pros and cons of open and closed questions*
- *I can correctly identify open and closed questions*
- *I can use open and closed questions*

When you are gaining information and feedback from your stakeholders to define your brief you will need to be able to ask open and closed questions. It is important to the know the difference between these two types of questions and the benefits and issues of each type of question.

	Open Questions	***Closed Questions***
Definition	*Open questions are useful for obtaining information. They usually start with:* *What…* *Why…* *When…* *Where…* *Who…* *How…*	*Closed questions will result in a yes/no answer*
Pros	• *Unlimited possible answers* • *Detailed answers* • *Allows for unexpected findings* • *Reveals the thinking of the stakeholders*	• *Quicker and easier for the stakeholder to answer* • *Easier to compare answers* • *Fewer irrelevant responses*
Cons	• *Statistical analysis difficult* • *May be lots of useless information* • *More time consuming for the stakeholder to answer*	• *The options may suggest answers* • *Can't provide all possible answers* • *Those with no opinion can respond* • *Stakeholders are forced to provide simple answers*

Some information gained from: https://sites.google.com/a/tamaki.ac.nz/dvc-online-courses/level-2/brief-development/client-meeting

Decide whether the following are Open or Closed questions, if the question is a closed question rewrite it underneath as an open question:

Question

How often would you eat chips as a snack?	● *Open*	● *Closed*
Do you like twisties?	● *Open*	● *Closed*
What do you like most about twisties?	● *Open*	● *Closed*
What do you least like about eating twisties?	● *Open*	● *Closed*
Do you share the twisties with others?	● *Open*	● *Closed*
How do you deal with the excess cheesy residue on your fingers?	● *Open*	● *Closed*
Do you lick your fingers during or after eating your twisties?	● *Open*	● *Closed*
Would you like a different solution to solve your "cheesy fingers" situation?	● *Open*	● *Closed*
How much would you be willing to pay for a solution to "cheesy fingers"?	● *Open*	● *Closed*

Drawing Activity

Drawing based on closed questions only	***Drawing based on open questions only***

LESSON PLAN

Topic: *The Language of a Design Brief – Hygienic Household Storage*	**Lesson Number:** *6*
Year Level: *12*	**Date:** *22nd March* **Duration:** *50 mins*

Curriculum Area: *Mathematics and Statistics* **Strand:** *Technological Practice*

Achievement objectives:

Brief Development (Level 7)

- *Justify the nature of an intended outcome in relation to the issue to be resolved and justify specifications in terms of key stakeholder feedback and wider community considerations.*

Learning Intentions:

Students will learn to:

- *write a well justified paragraph regarding a decision I have made after considering the positive and negative consequences of the solution.*

Success Criteria:

Students can:

- *identify the parts of the paragraph that make the justification clear in a model paragraph*
- *write a paragraph, justifying the reasoning for a decision*
- *use language in my paragraph that provides links between ideas and justification*

Assessment Tasks (if any):

This lesson will support students in the literacy learning needed for their successful engagement with their internals assessment tasks and will provide formative assessment opportunities to inform future planning.

Bi-cultural practice:	**Resources:**
Students will work collaboratively to co-construct understanding and use of linking language to justify a decision	*Justify a decision task sheet*

Inclusive practice/differentiation

Students will support each other in the justifying a decision task. In this sense a tuakana/teina approach will be employed to support students of different levels of confidence and capability in literacy.

Kat will do a similar task, with a less complex paragraph. She will supported by her Teacher Aide in only highlighting the linking language and the in writing a simple paragraph.

Scaffolded Learning Progressions	Classroom management, key questions, planning	Indicative time for Learning Progressions
Students will enter the room. *Students will each begin with a "do now" task of writing the definition for 2 more key vocabulary in their online Glossary.*	*Orderly method of entry will be reminded prior to students entering the room.* *Roll will be taken.* *Students will need access to a device and the Glossary template will be in the Google Classroom.*	*10 minutes*
Learning Intention will be shared and the Success Criteria co-constructed. *Teacher will explain the importance of being able to give thoughtful justification when working on their internal assessment task. The importance of linking language will be explained to students eg. …because; ….therefore; ….as a result; …consequently.* *Students will be given an example paragraph that justifies one possible solution to the "cheesy fingers" problem (receptive language).* *Student will read the paragraph and:* ● *highlight the linking language that shows that this is a paragraph that is providing a justification.* ● *underline the environmental factors mentioned in the paragraph to support this solution.* ● *circle the social factors mentioned in the paragraph to support this solution.*	*Students will be provided with the Justifying a Decision Task Sheet.* *Teacher will circulate during this time to ensure that clarification can be given as needed to students.*	*20 minutes*
Students will then write their own justification paragraph for an alternative solution to the "cheesy fingers" problem (productive language). They will model their paragraph on the example and will pay particular attention to their use of linking language and reasoning based on social and environmental factors.	*Teacher will circulate during this time to ensure that clarification can be given as needed to students*	*15 minutes*

Lesson Conclusion *Students will review the Learning Intention for the session and self-assess themselves against the success criteria.* *Students will add the main linking language to the bottom of their online glossary as a reminder of the importance of this when they later engage in their internal assessment task.*
Reflection and Evaluation Learning Intentions met? Provide evidence Management of resources? Classroom management/relationships with students? Implications and adjustments for next lesson(s)?

Justifying a Decision

LI: to write a well justified paragraph regarding a decision I have made after considering the positive and negative consequences of the solution.

Success Criteria:

- *I can identify the parts of the paragraph that make the justification clear in a model paragraph*
- *I can write a paragraph, justifying the reasoning for a decision*
- *I can use language in my paragraph that provides links between ideas and justification*

Here is an example of a paragraph justifying one possible solution to the "cheesy fingers" problem. Read the paragraph and:

- *Highlight the linking language that shows that this is a paragraph that is providing a justification.*
- *Underline the environmental factors mentioned in the paragraph to support this solution.*
- *Circle the social factors mentioned in the paragraph to support this solution.*

Finger covers are the most useful solution to the problem of "cheesy fingers". Firstly, the finger covers are made from food grade silicon, therefore, they are hygienic and safe for use when eating. Despite the higher cost associated with food grade silicon, it can be washed and reused, consequently there is less environmental impact than a solution made from a material that is single use only. The food guard solution allows for natural hand movements in selecting and eating the twistie, as a result of the snug fit to the finger and it only covering the top part of three fingers. The food guards would also be made in a choice of colours because this will allow different family members or friends to easily identify the finger guards that they are using during the snacking session.

Based on the model paragraph above, write your own paragraph where you justify another solution to the "cheesy fingers" problem.

The solution you will recommend and justify is the use of disposable gloves.

Make sure that you:

- *State the solution recommended.*
- *Support the decision with reasons that include environmental and social factors.*
- *Use linking language such as: as a result of…; because… ; therefore…; consequently…*

Reflection

I planned this unit with the intention of ensuring that students would have a clear understanding of the language associated with this achievement standard. In addition, it was also important to focus on the language structures that would improve the ability of students to gain stakeholder feedback and justify their thinking, which are also requirements of this standard.

I was conscious that it was important to ensure that students had the opportunity to engage in both receptive and productive language experiences. Therefore, in each lesson I tried to provide for both of these aspects in the planned experiences.

I was also conscious of ensuring the experiences were well scaffolded to support students who struggle with literacy-based activities. Many of the activities that I planned also incorporated group work with the intention of maximising tuakana/teina relationships and ensuring that students were able to display ako in their support of one another.

In order to also ensure cohesion through these lessons, the "cheesy fingers" problem became the consistent thread in lessons 3-6. In this way, even though different skills were being focussed on, the context students were working in became increasingly familiar, thus reducing mental load.

When I was first planning the unit, I also struggled to consider how to incorporate Te Reo Māori. I initially tried to find translations for the English vocabulary in Te Reo Māori. However, I soon realised that not only was this extremely difficult, but it was also insensitive. As I researched, I discovered that the design principles from a Māori world view are quite different. Therefore, I was forced to rethink my approach.

I then began to consider wisdom that could be learned from traditional Māori practices of food storage and how these practices would be highly relevant and useful to current practice. This traditional knowledge will be helpful for students to explore in relation to hygienic and sustainable options. The information that I found for students to engage with regarding these storage methods also contained Te Reo Māori kupu. Therefore, these lessons will also help grow the Te Reo Māori vocabulary of the students.

I placed these lessons first, so that they would allow for an immediate link to the context of the Internal Assessment Task, hygienic household storage and so that the vocabulary list would begin with Te Reo Māori kupu.

Another consideration was Kat, the ORS funded student. I spent time talking with Kat's Specialist Teacher so that I could determine how to alter the activities to meet her needs, whilst still allowing her to be included within the class. The group activities planned for the storage components particularly lent themselves to including Kat.

When I shared the Unit with my AT, she reminded me that the students in this class have done technology at Level 1 also. Therefore, brief development will not be new to them. The focus will be on reminding them of the prior knowledge that they bring to this task, refocusing them on certain aspects and highlighting the specific additions to brief development at Level 2. Much of this relates the importance of students explaining various aspects, as opposed to just identifying. In this regards the language structures involved in explaining would also be important to focus on with the students. Therefore, I would plan additional lessons regarding explanation.