**Unit plan: Design a label for a taewa product**

**Overview**

Students develop knowledge of prototype taewa products and design a label that reflects the cultural value and specified market for the product.

**Purpose**

Understand the attributes and benefits of new taewa products and their potential impact on society. Understand the purpose and function of a label in marketing and communicating information about a product. Design an appropriate label for a taewa product.

**Background**

**Suggestions for a scenario**

Researchers at the Riddet Institute in Palmerston North have developed prototype food products using taewa (Māori potatoes). The prototype products need labels before they can be sold to different markets. Your task is to develop an effective label for one of these products that will reflect and communicate some of the special characteristics of taewa.

Where's the Biotechnology?

In New Zealand, biotechnology research is investigating the physical and functional characteristics of some early New Zealand vegetables. Their findings show that early potato varieties, grown by Māori since their introduction to New Zealand, have considerable health benefits and unique qualities modern potatoes don’t have. Taewa haven’t been grown in commercial volumes since the late 19th century but now researchers are developing taewa products for their health benefits and other unique characteristics.

Researchers need to understand the properties of foods before they can use them to develop new products. Testing provides knowledge of how these foods can be processed and their nutritional composition. Researchers also have current knowledge of market trends and nutritional issues and know the importance of targeting food products to specific markets where the attributes of the product meet consumer demand.

**Curriculum focus**

**Technology**

Technological practice: Students will design a label for a taewa product. They will apply knowledge of the special characteristics of taewa and taewa products, and labelling, to develop and evaluate an appropriate label.

Technological knowledge: Students will develop their understanding of the purpose of prototypes. They will develop an understanding of the properties of taewa and how they can be used to make different products. They will consider the purpose and function of labels and demonstrate their knowledge by modelling and justifying their ideas.

Nature of technology: Students will develop an appreciation of how social and environmental issues and knowledge influenced the development of modern potato varieties and how the early varieties (taewa) evolved. They will consider how current research into growing taewa and development of taewa food products is likely to impact on different groups of people.

**Focus of skill & strategy**

This unit provides students with an opportunity to engage with a current technological development in New Zealand. They will appreciate the immediate and wider impact of developing taewa products and understand how labelling is used to market and communicate a product.

Students will be able to design a label for a prototype product that communicates the cultural and other unique qualities of taewa and targets a selected market.

**Health and Safety**

Students will understand how food labels can promote food safety and protect consumers.

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| **UNIT PLAN: Design a label for a taewa product**  |
| **Suggested learning intentions** | **Suggested learning experiences** | **Possible teaching/assessment activities** |
| **Introduction**Understand that labels have an aesthetic and functional purpose.  | **Introduction***This unit could focus on designing a label either for a student-developed taewa product or for an existing taewa prototype developed by the Riddet Institute.*Display a range of food products with labels. Discuss why we have labels on food products. Who are they for?Divide the class into groups and give each group a labelled product to analyse. Share the results as a class and discuss: What makes a good label? What information is useful for the consumer? What attracts the consumer and helps sell the product? Discuss labelling regulations and why these are needed. | **Introduction**Complete the worksheet: [What’s on a label?](https://www.sciencelearn.org.nz/resources/1307-what-s-on-a-label)Students create a checklist of what makes a good label. |
| **Introduce the scenario**Understand what a prototype is and its purpose in product development. Understand how the prototype products are made, and their properties, to consider the physical requirements of packaging.  | **Introduce the scenario****Scenario**: Prototypes of taewa products have been developed by researchers at the Riddet Institute in Palmerston North. They need labels before they can be sold to different markets.Introduce the taewa product prototypes. Display images of taewa snacks and cookies and also have some taewa cultivars and/or images to show their characteristics. To explore the physical and functional nature of these products and how they are made, divide the class into groups. Allocate each group the animation or a video to view, discuss and record how the product is made, its properties and packaging and labelling needs. Share and discuss as a class.Get animation:* [Making taewa snacks by extrusion](https://www.sciencelearn.org.nz/videos/664-making-taewa-snacks-using-extrusion)

Show videos:* [Developing taewa snacks](https://www.sciencelearn.org.nz/videos/393-developing-taewa-snacks)
* [Chef-ready taewa for restaurants](https://www.sciencelearn.org.nz/videos/394-chef-ready-taewa-for-restaurants)
 | **Introduce the scenario**Students chart the properties, packaging and labelling needs of each product. |
| **Developing expertise**Consider why the prototypes have been developed and their possible future impacts on different groups of people.  | **Developing expertise**Discuss reasons why the prototypes may have been developed. What factors have influenced their development? What positive and/or negative effects could they have on people and society? View the following videos to stimulate and support discussion:* [Taewa are taonga to Māori](https://www.sciencelearn.org.nz/videos/385-taewa-are-taonga-to-maori)
* [The importance of taewa research](https://www.sciencelearn.org.nz/videos/388-the-importance-of-taewa-research)
* [Testing identifies the benefits of taewa](https://www.sciencelearn.org.nz/videos/392-testing-identifies-the-benefits-of-taewa)

For background reference, get articles: * [The benefits of taewa](https://www.sciencelearn.org.nz/resources/788-the-benefits-of-taewa)
* [Developing novel foods from taewa](https://www.sciencelearn.org.nz/resources/790-developing-novel-foods-from-taewa)

Discuss ways the cultural value of the products could be communicated on a label.What are the target markets for these products and why? How will this impact on the label?In groups, critique a range of labels. Identify how design elements and principles are used and their effectiveness, for example, line, colour, shape, space, balance, emphasis, unity. Reflect on the taewa products and their cultural significance. How could design elements be used to convey this on a label? (Complete chart as part of planning.)Research labelling regulations and implications for taewa product labels. List required information for each of the taewa prototypes.Carry out a class survey to find out what other people think is important in a label. Divide class into groups and allocate a different age group to each class group. Have each student survey 5 people from the allocated age group for homework. Groups collate their responses and summarise key findings. Collate the whole class results to show what different age groups thinks is important. | **Developing expertise**Student chart of factors influencing development, and the benefits and impacts on people and society.Student record of legal requirements.Shared class list of key considerations for different age groups. |
| **Developing a brief**Students will describe the form and function of their intended label and specifications it must meet.  | **Developing a brief**Students select a taewa product for labelling, decide on an appropriate target market and, after reflecting on their learning about the products and labels, describe the nature of the label they will develop. This should also consider the type of packaging.Students reflect on previous learning activities and describe attributes/specifications that will make the label effective for their chosen taewa product. Consider aesthetic features of the label as well as its purpose and function and how to reflect the cultural value and the target market. | **Developing a brief****Assessment**: Student brief for a taewa product label.  |
| **Planning for practice**Students will consider the stages and resources needed to develop their label and make a plan to follow.  | **Planning for practice**Discuss the key stages required to develop the label, including getting constructive feedback. Feedback could be from an appropriate representative of the target market or expert, or from group-sharing and critique from fellow students. Students plan resources and allocate time within a given timeframe. Gather and assemble information to be included on the label. | **Planning for practice** |
| **Developing the taewa product label** Develop, model and evaluate a label for a prototype taewa product. | **Developing the taewa product label** Generate a range of label ideas, including aesthetic and functional details, that reflect the nature of the product, package and target market. Evaluate against specifications and refine ideas.Get feedback on developing ideas from key stakeholders (representatives of the target market). Refine ideas according to evaluation and feedback from stakeholders.Complete a model of the final proposed label and evaluate it with reference to the brief and specifications and feedback from stakeholders. | **Developing the taewa product label**  |
| **Presenting and evaluating the label**Critically evaluate the fitness for purpose of range of labels. | **Presenting and evaluating the label**Display all the completed labels.In groups, students choose the label they think is most suitable for each product and justify. Groups share decisions and justify to the class. | **Presenting and evaluating the label****Assessment**: Taewa product label evaluated in terms of the specifications.  |