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Design challenge A: Food safety checklist

Design situation

It is estimated that at least seven million* people in Australia become ill every year as a result of food they have eaten. It is estimated that one in five of these illnesses occurs from incorrect food handling in the home. Common symptoms include abdominal pain, vomiting, diarrhoea and fever. In most cases, food-borne illness can be easily prevented.

** Based on preliminary research by OzFoodNet, released by the Commonwealth Department of Health and Ageing in 2002.*

Design challenge

The challenge is for students to design, make and use a food safety checklist to promote good practice related to personal hygiene, food storage, food preparation and cooking in the home. This checklist will be used to assess the student's own and others' food safety behaviours.

Students:

- **Complete the Introductory unit: Food fit to eat — a food safety angle.**
- **Identify** the checks to be included in a food safety checklist.
- **Investigate** different ways of presenting a food safety checklist.
- **Investigate** the requirements in the checklist, including where and how the checklist will be used, and functional, aesthetic, social and environmental factors.
- **Investigate** appropriate materials for the preferred way of presenting the checklist, and skills and equipment required to produce the checklist.
- **Identify** style features to make the checklist effective — for example, clarity of messages, size and style of text, colours, graphics, white space.
- **Develop and evaluate alternatives** for the checklist, taking into account family requirements and results of testing materials and style features.
- **Test** materials and style features to determine the best alternative for the checklist.
- **Sketch** a design proposal for the chosen checklist, including product specifications.
- **Justify** the final design.
- **Annotate** the proposal to explain how the design meets functional, aesthetic, social and environmental considerations identified by the family.
- **Prepare a detailed production plan** for the production of the food safety checklist.
- **Produce** the food safety checklist following the production plan.
- **Test** the checklist by using it to evaluate their own work space and behaviours either at home or at school.
- **Evaluate** the checklist in terms of:
 - its effectiveness in promoting food safety
 - whether it matches their design ideas
 - family satisfaction with the product
 - how it compares with checklists used in the food industry.
- **Evaluate** the processes they used to meet the design challenge.

Sample overview (two hours per week)

Stage of design challenge	Learning experiences	Resources
Prerequisite: Students complete the Introductory unit: Food fit to eat - a food safety angle		
Week 1 Orienting	Teacher: <ul style="list-style-type: none"> ■ Introduces the design challenge (Student resource 13). Teacher and students: <ul style="list-style-type: none"> ■ Discuss expectations of the challenge. ■ Negotiate and record any amendments to the challenge and timelines for each stage of the challenge (Student resource 13). Students: <ul style="list-style-type: none"> ■ Plan how they will conduct the challenge. 	Student resource 13. Design challenge A: Food safety checklist
Identifying the checks to be included in a food safety checklist	Students: <ul style="list-style-type: none"> ■ Refer to one of the following student resources completed during the introductory unit: <ul style="list-style-type: none"> • Student resource 5: Help 'Con Tamination' solve the mystery OR • Student resource 9: Preventing food poisoning, to develop a preliminary list of factors for good food safety practices in the kitchen. <ul style="list-style-type: none"> ■ Share their ideas in pairs. ■ Join with another pair to identify other factors that could be included in a checklist. ■ Group the factors according to whether they involve personal hygiene, kitchen hygiene, food storage, food preparation and cooking. Prioritise the factors to identify the 'top ten', or whatever number is determined as appropriate by the students. (This number depends on how students decide to communicate the factors. 	Completed student resources from introductory unit 5: Help 'Con Tamination' solve the mystery OR 9. Preventing food poisoning

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Stage of design challenge	Learning experiences	Resources
<p>Week 2-3</p> <p>Investigating different ways of presenting a food safety checklist</p>	<p>Students:</p> <ul style="list-style-type: none"> ■ As a class, brainstorm ways of presenting the checklist — for example, as a fridge magnet, apron, whiteboard, mouse mat, CD — and appropriate materials for the options. ■ Sketch some of their ideas and discuss with peers and/or family. ■ Develop a list of questions for the family to identify the requirements in a checklist, including where and how the checklist will be used, functional, aesthetic, social and environmental factors, and how it will be presented — for example, fridge magnet. <p>Homework:</p> <p>Students discuss with the family the requirements of a checklist for the family.</p> <p>Students:</p> <ul style="list-style-type: none"> ■ Investigate appropriate materials for the preferred way of presenting the checklist, and skills and equipment required to produce the checklist. ■ Identify style features to make the checklist effective — for example, clarity of messages, size and style of text, colours, graphics, white space. ■ Test materials and style features to determine the best alternative for the food safety checklist. 	
<p>Designing, evaluating and refining a food safety checklist</p>	<p>Students:</p> <ul style="list-style-type: none"> ■ Develop alternatives for the checklist, taking into account family requirements and results of testing materials and style features (Student resource 14). <p>Homework:</p> <p>Students discuss with the family the appropriateness of the ideas and decide on preliminary ideas for the checklist.</p> <p>Students:</p> <ul style="list-style-type: none"> ■ Sketch and justify a design proposal for the chosen checklist, including product specifications. ■ Annotate the proposal to explain how the design meets functional, aesthetic, social and environmental considerations identified by the family. ■ Prepare a detailed plan for the production of the food safety checklist. 	<p>Student resource</p> <p>14. A food safety checklist: My design ideas</p>
<p>Week 4</p> <p>Producing the refined food safety checklist</p>	<p>Students:</p> <ul style="list-style-type: none"> ■ Produce the food safety checklist, following their production plan. 	

Stage of design challenge	Learning experiences	Resources
<p>Week 5</p> <p>Testing and evaluating the food safety checklist</p>	<p>Students:</p> <ul style="list-style-type: none"> ■ Test the checklist by using it to evaluate their own work space and behaviours either at home or at school. ■ Evaluate the checklist in terms of: <ul style="list-style-type: none"> • its effectiveness in promoting food safety • whether it matches their design ideas, including functional, aesthetic, social and environmental factors, and if not, why changes were made • the family's satisfaction with the product • how it compares with checklists used in the food industry. ■ Evaluate their own processes in meeting the design challenge. ■ Reflect on what they have learnt in completing the design challenge (Student resource 15). 	<p>Student resource</p> <p>15. Reflecting on the challenge</p>
<p>Extension activities</p>	<p>Students:</p> <ul style="list-style-type: none"> ■ Complete an interactive web-based quiz to evaluate their knowledge on food safety. ■ Promote the food safety checklist to the school community in the form of a brochure, via the school newsletter or a workshop presentation. 	