



Technologies: Design and Technologies

Teaching, learning and assessment exemplar

Year 7

Food specialisations: Easy as pie



Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

Background

This teaching, learning and assessment exemplar (the exemplar) has been developed by the School Curriculum and Standards Authority (the Authority) as part of the *School Education Act Employees (Teachers and Administrators) General Agreement 2017* (Clause 61.1–61.3).

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Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course. Teachers must exercise their professional judgement as to the appropriateness of any they may wish to use.

This resource utilises electronic web-based resources, such as videos and image galleries. Teachers should be present while an electronic resource is in use and close links immediately after a resource, such as a video has played to prevent default ‘auto play’ of additional videos. Where resources are referred for home study, they should be uploaded through Connect, or an equivalent system, that filters advertising content

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The Western Australian Curriculum

The *Western Australian Curriculum and Assessment Outline* (the *Outline* – <https://k10outline.scsa.wa.edu.au/>) sets out the mandated curriculum, guiding principles for teaching, learning and assessment, and support for teachers in their assessment and reporting of student achievement. The *Outline* recognises that all students in Australian schools, or international schools implementing the Western Australian Curriculum, are entitled to be given access to the eight learning areas described in the *Alice Springs (Mparntwe) Education Declaration*, December 2019.

The Technologies curriculum

The mandated curriculum is presented in the year level syllabus documents.

The Technologies curriculum delivers a sequential and age-appropriate progression of learning with the following key elements:

- a year level description that provides an overview of the context for teaching and learning in the year
- a series of content descriptions, populated through strands and sub-strands, that sets out the knowledge, understanding and skills that teachers are expected to teach and students are expected to learn
- an achievement standard that describes an expected level that the majority of students are achieving by the end of a given year of schooling. An achievement standard describes the quality of learning (e.g. the depth of conceptual understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required in the next year.




This exemplar

This Technologies exemplar articulates the content in the *Outline* and approaches to teaching, learning and assessment reflective of the Principles of Teaching, Learning and Assessment. This exemplar demonstrates a sequence of teaching and learning, including suggested assessment points, for 12 lessons.

Catering for diversity

This exemplar provides a suggested approach for the delivery of the curriculum and reflects the rationale, aims and content structure of the learning area. When planning the learning experiences, consideration has been given to ensuring that they are inclusive and can be used in, or adapted for, individual circumstances. It is the classroom teacher who is best placed to consider and respond to (accommodate) the diversity of their students. Reflecting on the learning experiences offered in this exemplar will enable teachers to make appropriate adjustments (where applicable) to better cater for students' gender, personal interests, achievement levels, socio-economic, cultural and language backgrounds, experiences and local area contexts.



Using this exemplar

This teaching, learning and assessment exemplar provides suggestions to support the delivery of the mandated curriculum content. The exemplar provides:

- a teaching and learning sequence
- the mandated curriculum content to be taught at each point of the teaching and learning sequence, suggested resources, sample assessment tasks and marking keys
- the number of lessons to deliver the teaching and learning experiences
- learning intentions and support notes that may provide focus questions and additional information and/or examples to assist with the interpretation of curriculum content
- support notes to assist teachers to unpack the content and support teaching and learning experiences
- teaching and learning experiences that outline the structure of the lesson. These explicitly state each activity that the lesson will progress through and the key focus area for that activity.

Links to electronic resources

This sequence of lessons may utilise electronic web-based resources, such as videos and image galleries. Teachers should be present while an electronic resource is in use and close links immediately after a resource, such as a video, has played to prevent default 'auto play' of additional videos. Where resources are referred for home study, they should be uploaded through Connect, or an equivalent system, that filters advertising content.



Best practice

Teaching and learning

The teaching and learning opportunities offered in this exemplar are not exhaustive. Thus, teachers are encouraged to make professional decisions about which learning experiences, and the sequence in which they are delivered, are best suited to their classroom context, taking into account the availability of resources and student ability.

This sample may prove a useful starting point for amplifying creativity in the classroom, while presenting the embedded expectations of the Western Australian Curriculum: Technologies.

Teachers may find opportunities to incorporate the General Capabilities and the Cross-curriculum Priorities into the teaching and learning program.

Ways of teaching – teachers can locate additional information on the Ways of teaching from the School Curriculum and Standards Authority (the Authority) website

<https://k10outline.scsa.wa.edu.au/home/wa-curriculum/learning-areas/technologies/design-and-technologies/p-10-design-and-technologies-teaching/design-and-technologies-ways-of-teaching>.

Assessing

Assessment, both formative and summative, is an integral part of teaching and learning. Assessment should arise naturally out of the learning experiences provided to students. In addition, assessment should provide regular opportunities for teachers to reflect on student achievement and progress. As part of the support it provides for teachers, this exemplar includes suggested assessment points. It is the teacher's role to consider the contexts of their classroom and students, the range of assessments required, and the sampling of content descriptions selected to allow their students the opportunity to demonstrate achievement in relation to the year level achievement standard. Teachers are best placed to make decisions about whether the suggested assessment/s are used as formative or summative assessment and/or for moderation purposes.

Ways of assessing – a range of assessment strategies that can enable teachers to understand where students are in their learning is available on the Authority website

<https://k10outline.scsa.wa.edu.au/home/wa-curriculum/learning-areas/technologies/design-and-technologies/p-10-design-and-technologies-assessing/design-and-technologies-ways-of-assessing>.

Reflecting

Reflective practice involves a cyclic process during which teachers continually review the effects of their teaching and make appropriate adjustments to their planning. The cycle involves planning, teaching, observing, reflecting and replanning.

This exemplar supports reflective practice and provides flexibility for teachers in their planning. The exemplar shows how content can be combined and revisited throughout the year. Teachers will choose to expand or contract the amount of time spent on developing the required understandings and skills according to their reflective processes and professional judgements about their students' evolving learning needs.



Easy as pie

This exemplar can be used to further develop students' Food specialisations understanding and design thinking skills.

Throughout the teaching and learning sequence, teachers will explicitly teach the design thinking skills students require to complete the summative assessment task at the end of the sequence.

Production of simple food products

Students apply the design thinking skills to produce simple food products. They consider competing factors and ways in which products and services evolve regionally. The content will include:

- design development
- communication and review of ideas
- application of processes within a recipe
- following a plan, using a method
- safe production of a food product
- evaluating, using contextual criteria.



Year level description

In the early adolescence phase of schooling, students align with their peer group and begin to question established conventions, practices and values. Learning and teaching programs assist students to develop a broader and more comprehensive understanding of the contexts of their lives and the world in which they live.

Design and Technologies focuses on further development of understanding and design thinking skills in ways products evolve locally to achieve designed solutions. Students begin to develop an interest in particular fields of knowledge, such as engineering, food and fibre production, food systems and various materials and their use.

In Year 7, students have opportunities to learn about technologies in society and ways people in design and technologies occupations consider competing factors, social and ethical influences and existing technologies in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students are provided with opportunities to investigate ways products, services and environments evolve locally with the use of various technologies.

Students are provided with opportunities to manage and create a range of designed solutions to achieve a specific purpose. They extend understanding of the vital role and ways design and technologies are incorporated in everyday life. When defining problems, students identify the key elements of the problem, the intended purpose and ways competing factors and constraints are at play. They manage and design increasingly complex processes and solutions with given technologies and techniques, considering social and ethical influences. Students collaborate and implement agreed protocols when using a range of technologies, components and equipment to produce design solutions. They plan and manage individual and team projects with autonomy. Students consider ways of managing the exchange of ideas, time and available resources, and use given contextual criteria to evaluate design processes and solutions.



Achievement standard

By the end of the year:

Students consider ways products, services and/or environments evolve locally. They recognise competing factors, including social and ethical influences and existing technologies for designed solutions. In Engineering principles and systems, students use motion, force and energy to manipulate and control engineered systems. In Food and fibre production, students identify features of production systems including managed environments to produce local products and achieve designed solutions. In Food specialisations, students recognise ways nutritional values and sensory properties of food determine preparation techniques and presentation of a designed solution. In Materials and technologies specialisations, students identify ways the properties of materials, specialised technologies and production processes influence designed solutions to achieve quality and safely produced products.

In the Design and Technologies contexts, students investigate and define the purpose for a given task and design solutions by considering constraints, social and ethical factors, available specialised technologies and ways products evolve locally. Students implement agreed protocols using a range of techniques, technologies, components and processes to produce designed solutions. They apply given contextual criteria to evaluate design processes and solutions. Students plan, develop and communicate ideas using project management processes/skills, considering time and available resources to achieve solutions.



Lessons 1–12

Easy as pie



Lesson 1: What's the recipe?

The Western Australian Curriculum content addressed in this lesson is below.

Contexts

Food specialisations

- Sensory properties and nutritional value of foods determine preparation, production and presentation techniques
- Social and ethical considerations for the design and development of meals and specialised food products, including ways products evolve locally to achieve designed solutions

Design thinking skills

Investigating and defining

- Investigate and define the problem and requirements of a given design brief
- Break down a given design brief, identifying and defining the purpose and competing considerations
- Consider given technologies, resources and/or components to develop solutions

Lesson outline

| Learning intentions |
|--|
| <p>Students will:</p> <ul style="list-style-type: none">• Describe the features of a recipe.• Revise the six main nutrients (carbohydrates, proteins, lipids (fats), vitamins, minerals and water), the role of each in the body and food sources for each nutrient.• Review food preparation and processing skills appropriate for the recipe.• Plan oven management and stove top safety. |



Preparation for the lesson

- Select a recipe, such as apple crumble or similar, to serve individually to students. You may like to use the following recipe: <https://www.jamieoliver.com/recipes/fruit-recipes/classic-apple-crumble/0>
- Print copies of the recipe for the class or upload to a shared class file.
- Print copies of the food ticket (Appendix B) for the class or upload to a shared class file.
- Be familiar with the chosen recipe, and competing factors (resources, time, equipment, etc.) and constraints (cultural, skill development and seasonal considerations). Apple crumble ingredients (components) could include flour, butter, apple, sugar and lemon.
- Prepare the apple crumble, or other recipe, to present to the class.
- Organise ingredients and equipment to demonstrate the recipe to the class.
- Select a graphic organiser, such as a placemat or concept map, and prepare copies for each small group. Graphic organisers are available at:
 - Getting it Together <https://getting-it-together.moadoph.gov.au/teacher-guide/graphic-organisers.html>.
- Decide whether students will each prepare the recipe or work in pairs, with one student preparing the crumble and the other the filling. Adjust the food order accordingly.
- Review the worksheets (Appendix B) and adjust if needed to reflect any changes to the sample lesson. Prepare a copy of each for the students or upload to the shared class file.


Teaching and learning experiences

Students – prior knowledge

- Can select appropriate equipment and utensils to prepare food hygienically
- Can determine systems for safety, choose preparation techniques processing skills and procedures, and presentation styles
- Are familiar with the six main nutrients of carbohydrates, proteins, lipids (fats), vitamins, minerals, and water, and the role of fibre in the body.


Teacher

- Introduce the food-related term ‘easy as pie’ to students. Connect the term with the importance of preparation, measuring accurately and following instructions carefully so the task becomes easy to perform. Students follow the recipe instructions to produce simple, tasty food (suitable for an at-home meal) quickly and efficiently. Explain that the task will become as easy as pie!
- Show a prepared recipe/dish (apple crumble) to the class without naming it or giving any other details. Identify a physical property, such as appearance, colour, shape, size, texture, lines, or temperature. Note that the presentation style is in an oven-proof dish.
- Ask students to fold a sheet of A4 paper into thirds and:
 - sketch the dish and annotate the physical properties of the dish in the top third of the paper
 - describe the physical properties and presentation style in the middle third
 - serve a portion of the dish for each student; they may then add more details, such as aroma, to the top and middle thirds
 - taste and analyse the serving provided. Describe the sensory properties in the bottom third.
- As a class, discuss the physical and sensory properties and identify the main flavours, using correct terminology. In the discussion, include the effect on the dish of using local, fresh and seasonal produce.

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- Direct students to complete Lesson 1 worksheet: *What's the recipe?* (Appendix B).
 - Assign students to small groups and ask them to compare the information on their Lesson 1 worksheet: *What's the recipe?* using a graphic organiser to collate and summarise ideas. Display the graphic organisers and discuss ideas as a class to identify what is in the recipe, the required equipment and utensils, how to make the dish and a possible name for the dish.
 - The big reveal! Share the apple crumble recipe with students and identify the group that predicted the correct ingredients, quantities, equipment/utensils. Discuss the method, including oven management, ways to prepare food hygienically and systems for safety.
 - Demonstrate the steps and skills needed to produce the apple crumble in the next lesson. Discuss the selection of the ingredients, which will determine the techniques used. For example, grating, slicing or chopping the apple and using fingers to rub the butter into the flour. Demonstrate best practice in food safety and how to use correct techniques, for example, use of a paring knife to prepare the apple. Demonstrate various skills required, including measuring ingredients and using a stove. Encourage students to practise skills at home.
 - Revise the task and its purpose (successfully managing processes and producing the recipe). Ways to achieve this include measuring accurately, following the method, applying systems for safety, efficiently cleaning up and managing time. Explain that if students follow the instructions, production will be as 'easy as pie'.
 - Revise the six major nutrients. Ask students to work with a partner to suggest ways to alter the recipe for nutritional value and/or flavour. For example, include rolled oats, coconut, nuts, seeds, spices, etc. in the crumble or add ingredients, such as sultanas, quandong, cranberries, seasonal fruit, nuts, seeds or spices (cloves) to the filling. Briefly discuss the reasons the recipe may be altered, such as for specific health issues, cultural influences, physical and sensory properties, and personal likes and dislikes.
 - Direct students to individually complete the Lesson 2 worksheet: *It's a crumble (nutrients)*, and a food ticket. The food ticket is used to make alterations to the basic apple crumble recipe ingredients when students produce this next lesson (Appendix B). Note: no food ticket assumes there is no alteration to the basic recipe.

Students

- Engage in a class discussion to clarify the task and its purpose, and contribute ideas for the food-related term, 'easy as pie'.
- Sketch and annotate the physical properties (appearance, colour, shape, size, texture, lines, temperature) for the dish served. Describe the physical properties of the dish. Taste and analyse the sample. Describe the sensory properties. Record the information on a sheet of paper, folded into thirds.
- Based on the taste analysis, and the physical and sensory properties, suggest a suitable name for the recipe, predict the ingredients, and quantities for each. Predict the equipment/utensils and method needed to prepare the recipe. Record the information on the Lesson 1 worksheet: *What's the recipe?*
- Work in small groups to compare worksheet information, including lists and the method. Together decide on the preferred recipe name. Discuss and adjust the predicted ingredients list and quantities, and the equipment/utensils required. Review the method and select two preferred techniques or methods to present the dish.

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- Use a graphic organiser to summarise and record the group's worksheet information. Display the completed graphic organiser for the class to review.
 - In groups, compare predictions with the actual recipe. Did anyone guess the recipe?
 - Observe the teacher demonstrating the processes and skills needed to make apple crumble. Note the safety points, measurement techniques, handling of equipment, and specific skills and techniques. Clarify the task and its purpose.
 - With a partner, discuss and then propose ways to modify the recipe for nutritional value and/or flavour. Complete the Lesson 2 worksheet: *It's a crumble (nutrients)*, and the food ticket (Appendix B).
 - For information about nutrients visit:
 - The Department of Health – Nutrients
<https://www.health.gov.au/health-topics/food-and-nutrition/about>.

Lesson conclusion

- Revise the features of a recipe.
 - Ask students to independently list the features in one minute.
 - Conduct a stand-up-sit-down activity. All students stand with their list. Ask a student to call out a recipe feature and if students do not have the feature, they sit down. Repeat, with another student making the call. Answers could include title/name, ingredients, quantities, method and possibly a time plan, utensils list, number of serves, oven temperature, use of abbreviations, and any other relevant features. Compile a complete list of recipe features (and a winner, if appropriate).
- Formative assessment:
 - review Lesson 1 worksheet: *What's the recipe?* and Lesson 2 worksheet: *It's a crumble (nutrients)* (Appendix B).
 - observe student understanding during the stand-up-sit-down activity
 - collect food tickets and review the recipe alteration for nutritional value and/or flavour.

Note: the completed food ticket can be the exit ticket for students at the conclusion of the lesson (exit ticket = students are required to submit this to the teacher to exit the classroom at the end of the lesson).



Lesson 2: It's a crumble

The Western Australian Curriculum content addressed in this lesson is below.

Design thinking skills

Producing and implementing

- Implement agreed protocols and use a range of technologies, components and/or equipment to produce designed solutions

Evaluating

- Use given contextual criteria to evaluate design processes and solutions

Lesson outline

| Learning intentions |
|--|
| <p>Students will:</p> <ul style="list-style-type: none">• Use a range of ingredients, equipment/utensils to produce a simple, tasty food product (suitable as an at-home dessert) quickly and efficiently.• Prepare food to make solutions for preferred nutritional values and flavours.• Apply given contextual criteria to evaluate design processes and solutions. |

Preparation for the lesson

- Check food availability, including the food tickets from the previous lesson.
- Adjust the contextual criteria to reflect school context and prepare copies of the criteria or upload to the shared class file for students to evaluate design processes and solutions.


Teaching and learning experiences

Students – prior knowledge

- Are familiar with the selected recipe ingredients, equipment/utensils and processes required to produce the desired solution
- Understand the practices and procedures required, including oven management and how to use the stove top.

Teacher

- Revise the task and its purpose, which is to follow recipe instructions to produce a simple, tasty food product (suitable as an at-home dessert) quickly and efficiently. Encourage students to manage steps in the process to ensure success.
- Remind students to implement agreed protocols, such as measuring accurately, following the method, applying systems for safety (such as stove top use and oven management), using efficient clean-up processes, and considering time management strategies.
- Provide quiet time for students to review the recipe requirements before production.
- Return food tickets to students as a reminder of their intentions to develop a solution and improve the nutritional value and/or flavour of the basic recipe by altering ingredients.

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- Monitor students to make sure they move safely during distribution of the ingredients and equipment, and when using the oven and stove top.
 - Monitor student independence in applying recipe requirements and interpreting processes for safe work practices.
 - Remind students to work collaboratively to wash up, store equipment, clear waste and clean surfaces.
 - Ask students to serve and photograph their own final product.
 - Provide students with the given contextual criteria using the Lesson 2 worksheet: *It's a crumble (evaluation)* (Appendix B) to evaluate the solution produced (apple crumble).


Students

- Review the task and its purpose.
- Before commencing production, review the recipe requirements, including ingredients, proposed alterations based on the food ticket, and processes in the method.
- Collect required equipment/ingredients and implement checks for oven management and stove top use.
- Follow recipe instructions to safely and efficiently produce apple crumble.
- Work together while the crumble is baking to wash up, store equipment, clear waste and clean surfaces.
- Serve the final product for viewing. Photograph the dish and note the physical properties and presentation style.
- Use the provided criteria to begin evaluating.

Lesson conclusion

- Formative assessment:
 - use the criteria (Appendix B) to evaluate the apple crumble, considering the design process, nutritional value, flavour, use of ingredients and equipment/utensils
 - monitor student capabilities to apply recipe requirements and interpret processes for ease of production.

Note: the evaluating process may be completed during the following lesson.



Lessons 3–4: It’s a pie

The Western Australian Curriculum content addressed in these lessons is below.

Design thinking skills

Project management

- Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions

Designing

- Design processes and solutions with given technologies and techniques, using appropriate technical terms

Lesson outline

| Learning intentions |
|--|
| Students will: <ul style="list-style-type: none">• Identify and communicate features and processes of a recipe.• Use appropriate technical terms to describe various design thinking skills.• Collaboratively prepare ingredients to produce pie filling considering time and available resources. |

Preparation for the lesson

- Prepare a ‘recipe jigsaw’ using recipes, such as ratatouille, shepherd’s pie, quesadilla, pancake batter, filo triangles/rolls/parcels, turnovers, etc. Decide on the number of recipes and jigsaw pieces needed for the number of students in the class.
- Prepare paper for mind maps.
- Prepare paper strips, 7 cm x 30 cm; squares, 20–30 cm x 20–30 cm; and plate-sized circles (to demonstrate folding for filo triangles/rolls/parcels, turnovers, quesadillas, and pancakes).
- Gather ingredients for one or two batches of ratatouille to use as a pie filling.
- Collect samples (or illustrations) of outer layer or ‘shell’ options for a pie-like product, such as filo pastry, puff pastry, tortilla, flat bread, wraps, spring roll wrappers, potato or other products.

Teaching and learning experiences

Students – prior knowledge

- Use strategies to plan, develop and communicate ideas and information, using project management processes, considering time and available resources to achieve solutions
- Understand the components of a recipe, including ingredients and method.




Teacher

- Use a Plus Minus Interesting Chart (PMI) organiser to conduct a class review of the processes and procedures from Lesson 2. Ask students to evaluate the apple crumble produced using the given contextual criteria. Ask students to determine and justify if the processes were 'easy as pie'.
- Discuss what makes a pie (a food product with an outer layer with a savoury or sweet filling, with or without a top). Explain the design features of a pie using recipe books/websites to illustrate the features for various pies. Explain that these features determine solutions when planning and producing food products, and consider aspects, such as physical and sensory properties, nutritional value, minimal packaging, and ease of carrying.
- Introduce the recipe jigsaw.
 - Divide students into small groups.
 - Each group will be given a bag containing pieces of paper/card with parts of a recipe, such as an ingredients list, equipment/utensils, and a section of the method.
 - Students select a recipe piece from the bag, then work as a group to complete the recipe jigsaw, not by shape, but by parts to create the recipe.
 - Once the recipe is completed, the students create a mind map or concept map with a sketch of the pie as the focus.
 - Using technical terms, students label the recipe design features and predict the physical and sensory properties. Include serving suggestions for the pie and use diagrams to show how the pie would be made. Set a time limit and then ask groups to display their maps.
- Based on the group findings, discuss and list ideas of what is a pie and collate recipe ideas.

What is a pie?

| Pie | Design features | Savoury or sweet | Topping | Filling |
|-----|-----------------|------------------|---------|---------|
| | | | | |

- 
- Lead a class discussion about the design features of the recipes and discuss why each could be a pie. Compare the features of the apple crumble recipe with those of the shepherd's pie recipe.
 - Outline procedures for the next production task: a simple, easy-to-prepare pie, with a savoury, tomato-based filling and a choice of two pie shells.
 - Discuss the various fillings identified in the recipe jigsaw activity, including ratatouille, which will be the basis for a savoury pie filling.
 - Explain to students that they will prepare and produce one or two batches of ratatouille.
 - Allocate preparation tasks to students, such as preparing vegetables, frying onion and garlic, etc. Package and store ratatouille until needed.
 - Refer to the previous mind maps and use samples or illustrations of various types of pie shells (pastry, spring roll wrappers, flatbreads, vegetables, etc.) to demonstrate various food products which could be used to hold a filling.
 - Ask individual students to use paper strips, squares or circles to demonstrate various ways to wrap up the filling.

Students

- Participate in a class discussion about the processes and production skills needed to make the apple crumble. Contribute ideas and suggestions to the class PMI organiser. Use the criteria to evaluate the apple crumble.
- Contribute to the discussion about the design features of pies and how these features are used to develop solutions when planning and producing food products, considering aspects, such as physical and sensory properties, nutritional value, minimal packaging, and ease of carrying.
- Participate in the recipe jigsaw activity to draw connections between the recipe parts.
- Work in small groups to list the design features of the recipe. Create a mind map (including diagrams, ingredients list, technical terms, and physical and sensory properties, etc.) to clarify design features and suggest how the design could be altered.
- Using the information in the mind map, list possible pie designs, components and ways to alter design features.
- Help produce one or more batches of ratatouille.
- Contribute to a discussion about pie shells to hold the pie filling, including various folding techniques. Practise folding techniques using paper.
- Work with a partner to review the processes and production skills required to make a pie.



Lesson conclusion

- Formative assessment:
 - contribution to the class PMI organiser
 - participation in the recipe jigsaw and the identification of design features of a recipe
 - working collaboratively to deconstruct a recipe and develop a mind map
 - use of correct technical terms
 - follow hygienic practices when producing the pie filling.

Optional: as an 'exit ticket' for the conclusion of the lesson, students upload a 10–15 second interview to the shared class file.

Note: students may access the shared class file to review the skills and techniques needed for the task to be 'easy as pie'. They may wish to develop their own list of skills, processes, techniques and useful tips.



Lesson 5: Pie by design

The Western Australian Curriculum content addressed in this lesson is below.

Contexts

Food specialisations

- Sensory properties and nutritional value of foods determine preparation, production and presentation techniques
- Social and ethical considerations for the design and development of meals and specialised food products, including ways products evolve locally to achieve designed solutions

Technologies and society

- Products, services and/or environments evolve locally through the application of technologies

Design thinking skills

Investigating and defining

- Investigate and define the problem and requirements of a given design brief
- Break down a given design brief, identifying and defining the purpose and competing considerations
- Consider given technologies, resources and/or components to develop solutions

Designing

- Design processes and solutions with given technologies and techniques, using appropriate technical terms

Lesson outline

| Learning intentions |
|---|
| Students will: <ul style="list-style-type: none">• Understand, identify and work within constraints to develop food solutions.• Review the nutritional value of a savoury pie.• Design and communicate design ideas and processes to produce a savoury pie.• Work independently through the recipe design process and reflect positively on peer feedback. |

Preparation for the lesson

- Collect ingredients/equipment to demonstrate the making of pancake batter and the construction of filo triangles/rolls/parcels.
- Prepare copies of the Lesson 5 worksheet: *Pie by design (nutrients)* (Appendix B).
- Prepare food tickets for additional food items for the design task.
- Prepare paper (squares, sticky notes) for reviewers to provide feedback to the designers.



Teaching and learning experiences

Students – prior knowledge

- Understand the features of a recipe
- Are familiar with the six major nutrients needed to review the nutritional value of food (carbohydrates, proteins, lipids (fats), vitamins, minerals, and water).

Teacher

- Remind students the task is to design and produce a savoury pie from the ratatouille prepared in the previous lesson and that they will choose between filo pastry or pancake batter for the pie shell.
- Demonstrate how to make a pancake and how to use filo pastry (follow the tips below).
- Distribute recipes.
- Discuss design ideas for both pancakes and filo pastry. Consider the preferred shape and size of the final product, as well as its colour, decoration, and serving method. Consider the option to reserve a small portion of the filling to use as decoration.
- Revise and define the given task: to design and produce a simple, easy to prepare food product based on given constraints, including improved nutritional value, appealing sensory properties, includes a range of food preparation techniques/processes, and is completed within the given timeframe.
- Outline the constraints to students (Appendix B).
- Distribute both Lesson 5 worksheets: *Pie by design (nutrients)* and *Pie by design (fillings and food ticket)* (Appendix B) or upload to the shared class file. Discuss requirements and expectations.
- Instruct students to work independently to design their own pie recipe using the instructions provided in the worksheet.
- Students review the nutritional value of the savoury pie using the Lesson 5 worksheet: *Pie by design (nutrients)* (Appendix B). They may add extra food items, and complete a food ticket for extras, based on the constraints provided. Consider design features such as size, shape and colour, and presentation technique.
- Provide students with 15–20 minutes working time before having the design process reviewed by a peer for 3–5 minutes. Students pass their design to another student to review the design process for the savoury pie and make notes on:
 - one aspect of the recipe design they like
 - the clarity of the process in the method
 - the proposed serving technique
 - the nutritional accuracy of the food ticket.
- The students to discuss the progress of the design ideas for the pie recipe. Repeat the process to ensure all designs are reviewed and feedback provided.
- Ask students to submit a food ticket if food items are to be added to the savoury pie (for nutrition or flavour).
- Formative task: ensure students individually complete questions 1–4 of the Lesson 5 worksheet: *Pie by design (fillings and food ticket)* to be ready for the production stage in the next lesson.

Pie filling table

| | | |
|---|-------------------------------|--|
| Filling: up to half a cup of the ratatouille filling | | Pie shell: select either pancake or filo pastry _____ |
| For the filling, select additional foods from the list | | |
| 1–2 serves | 1 serve only (protein option) | 1 serve only (dairy option) |
| a handful of spinach leaves | 1 tablespoon pepitas | 30 g cheese |
| 1/4 cup of pea/bean shoots | 1 tablespoon sunflower seeds | 1 tablespoon ricotta |
| spice (name) | | 30 g feta |
| fresh basil, chopped | | |
| | | |
| | | |

Note: schools may alter the list, considering costs, food availability, seasonality, skill development, cultural influences, etc.

Students

- Reflect on the preparations completed in the previous lesson and the various options for pie shells.
- Where possible, assist the teacher during the demonstration by measuring, controlling heat to cook the pancakes, folding and rolling. Decide on the preferred flavours and properties for the cooked product.
- Break down the task requirements.
- With the teacher, clarify the task requirements to make sure you understand the constraints and how to design a recipe. Use the Lesson 5 worksheet: *Pie by design (fillings and food ticket)* (Appendix B) for instructions.
- Complete the Lesson 5 worksheet: *Pie by design (nutrients)* (Appendix B) to determine the nutritional value of the proposed pie and submit a food ticket if additional food items are needed.
- Work individually to complete the recipe design and prepare for production of the savoury pie.
- Pass the design worksheet to a peer for review and use the peer review questions provided by the teacher to evaluate and develop feedback for the designer to consider.
- Students meet to discuss the feedback and adjust the recipe, if necessary.
- Formative task: students individually complete questions 1–4 of the Lesson 5 worksheet: *Pie by design (fillings and food ticket)* (Appendix B) to be ready for the production stage in the next lesson.



Conclusion

- Students use the food ticket as an 'exit ticket' at the conclusion of the lesson.
- Formative assessment:
 - review feedback notes for student understanding and application of procedures for the recipe design process
 - check the Lesson 5 worksheet: *Pie by design (nutrients)* (Appendix B) for accuracy and student understanding
 - ensure questions 1–4 of the Lesson 5 worksheet: *Pie by design (fillings and food ticket)* (Appendix B) are completed.



Lesson 6: Make the pie

The Western Australian Curriculum content addressed in this lesson is below.

Design thinking skills

Producing and implementing

- Implement agreed protocols and use a range of technologies, components and/or equipment to produce designed solutions

Evaluating

- Use given contextual criteria to evaluate design processes and solutions
-

Lesson outline

| Learning intentions |
|--|
| Students will: <ul style="list-style-type: none">• Use the designed recipe to safely produce the planned food product, a simple pie.• Work collaboratively to share equipment, workspaces and the clean-up process. |

Preparation for the lesson

- Check food tickets were collected from students last lesson, and the extra food items are available for production.
- Check that the class food order is complete and accurate, including pre-prepared ratatouille filling.
- Prepare batter for pancakes and establish procedures to work safely around a central point to cook pancakes.

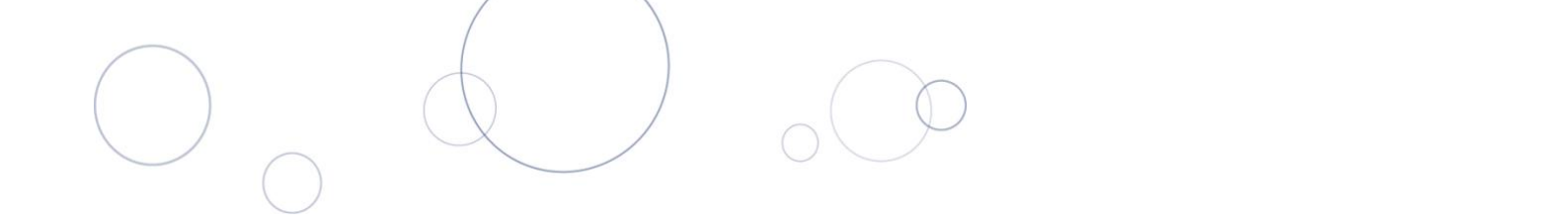
Teaching and learning experiences

Students – prior knowledge

- Understand how to measure ingredients and prepare equipment
- Are familiar with safe stove top and oven management processes
- Understand application of the given contextual criteria to evaluate design processes and solutions.

Teacher

- Revise and break down the task requirements and purpose to design and produce a simple, easy to prepare, tasty food product (a pie). The pie is based on given contextual criteria, such as improved nutritional value and desirable physical and sensory properties.
- Establish the pancake cooking station and outline safety procedures required when using the station.
- Review steps in the method to ensure the successful execution of the recipe during the producing and implementing phase.
- Return food tickets to students.
- Remind students to set out equipment, measure accurately, follow the method, apply systems for safety, use efficient clean-up processes, and consider time management strategies.

- 
- Provide quiet time for students to review the recipe requirements and procedures. Clarify any uncertainties with individual students.
 - Monitor individual student progress, safety procedures, time management and interpretation of processes for production of the pie.
 - Remind students to work collaboratively to wash up, store equipment, clear waste and clean surfaces.
 - Ask students to serve the food for the teacher to view. Teacher may request students to photograph their pies to assist in the evaluating process.

Students

- Break down the task requirements to clarify the process
- Review the recipe requirements and procedures. Consider setting out equipment, checking ingredients, measuring accurately, revising how to use equipment and utensils safely, reading the method and the serving procedure, and reviewing the clean-up process
- Before commencing production, clarify processes and skills (if required)
- Individually monitor progress, time management and safety procedures and processes
- Work collaboratively to ensure that once finished there will be efficient wash up/waste clearing processes and correct storage of equipment
- Serve food for the teacher to view. Photograph the pie to assist with evaluation (if required).

Conclusion

- Formative assessment:
 - complete question 4 of the Lesson 5 worksheet: *Pie by design (fillings and food ticket)*
 - use the given contextual criteria to evaluate the design processes and the end solution – the pie! (Appendix B).

Note: the evaluating process can be completed as homework, if required, to be submitted at the next lesson.



Lessons 7–8: Golden galette

The Western Australian Curriculum content addressed in these lessons is below.

Technologies and society

- People in design and technologies occupations consider competing factors, social and ethical influence and existing technologies for designed solutions
- Products, services and/or environments evolve locally through the application of technologies

Design thinking skills

Project management

- Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions

Lesson outline

| Learning intentions |
|--|
| Students will: <ul style="list-style-type: none">• Introduce ways to work collaboratively and to plan, develop and communicate ideas to produce a golden galette.• Understand ways in which products, including fresh, seasonal produce, evolve locally and regionally. |

Preparation for the lesson

- Organise students into pairs and assign half of the class to bake a fruit galette, the other half a savoury vegetable galette (they will complete the planning during this lesson and produce the galette in the next lesson).
- Decide on options for the fruit and savoury filling.
- Decide on the base: a scone-style mix, shortcrust pastry, filo pastry, or other, depending on student skill development.
- Prepare to demonstrate the production of a galette, use of utensils and ingredients and the method.
- Prepare large sheets of paper for the design process, such as a storyboard or method.
- Optional: devices to photograph/video/green screen or paper for a storyboard display.
- Optional: squares of paper for students to prepare questions for the yes/no quiz.

Teaching and learning experiences

Students – prior knowledge

- Understand recipe design, preparation and presentation techniques for simple food products
- Understand development of design ideas and how to plan for implementation of safe processing techniques for food production.


Teacher

- Use a concept map to conduct a class review of the processes and procedures from the previous production lesson. Collect both completed Lesson 5 worksheets: *Pie by design (nutrients)* and *Pie by design (fillings and food ticket)* (questions 1–4) for the formative assessment.

- Optional: students to mark their worksheet, or that of another student, using the marking key.
- Outline to students they will work in pairs to communicate design ideas, plan and produce a free-form style pie called a galette, that is either savoury or sweet.
- Show an illustration of a galette and point out the two components, a pie-like pastry dough base and a vegetable or fruit filling that is baked in the oven.
- Display the ingredients options on large sheets of paper, or on screen (see table below).
- Ingredient options table:

| Base | Savoury | Sweet | Local or regional |
|---|---|--|-------------------|
| scone style mix or 1 1/2 cups flour 1/4 cup cornmeal pinch of salt 100 grams butter 1/4 cup water or sheets of filo pastry butter, melted or shortcrust pastry | seasonal vegetables (list) 30 grams cheese 1 tablespoon tomato paste 1 tablespoon flour salt, pepper 15 grams butter egg wash | seasonal fruit (list) 1 tablespoon sugar 1 tablespoon flour cinnamon, nutmeg 15 grams butter egg wash | |

- As a class, discuss products produced locally and regionally. Generate a definition for 'local produce' and 'regional produce'. View the Western Australian regional areas at: Department of Primary Industries and Regional Development
<https://www.wa.gov.au/organisation/department-of-primary-industries-and-regional-development>
- Develop a class list of local and regional produce.
- Demonstrate the production techniques for the preferred base. Have the utensils displayed, ingredients ready, and check the oven. Make dough, knead lightly and pat out on parchment paper, then lift onto a baking tray.
- Explain that a galette requires the vegetables/fruit to be thinly sliced so the filling bakes at the same time as the crust. Once sliced, the vegetables are tossed with a mixture of flour, salt and pepper; the fruit is tossed with a mixture of sugar and flour; the flour helps to absorb moisture from the filling and thicken it.
- Consider design features for the galette, including shape, colour and arrangement of filling pieces to form a pattern. Place the filling onto the centre of the prepared dough. Fold edges in and over the filling. Prepare an egg wash station. Bake on parchment paper in a hot oven for approximately 20 minutes.
- Discuss with the class what working collaboratively looks like to produce a galette, including sharing tasks for dough preparation and filling preparation.
- Discuss with students how to work collaboratively with a partner to develop a storyboard for production day.
- Depending on resources, the storyboard could be created in applications, such as iMovie, or Green Screen by Do Ink and uploaded onto the shared class drive.

- 
- iMovie
 - <https://www.apple.com/au/imovie/>
 - Do Ink – How to use the green screen app
 - https://www.youtube.com/watch?v=iyB9u_UBlxA
 - Do Ink – how to animate props in green screen
 - https://www.youtube.com/watch?v=W_FfxYJbtHs
 - Display the storyboard, 'how to make a galette: from design to presentation', in the class gallery for evaluating.
 - Organise students into pairs and randomly assign a savoury or sweet galette to each pair. Provide large sheets of paper for students to consider the main concepts for the storyboard. Include title, ingredients, utensils, equipment, method and presentation technique. Remind students to photograph or illustrate each step during production.
 - If time permits, revise the concept 'easy as pie', by conducting a class quiz. Establish a 'Yes' place in the room and a 'No' place, and a continuum between the two spaces. Students write a question on a paper square, approximately 10–15 cm, then fold it and give to the teacher. Focus the topic on design ideas, production processes, nutritional values, etc. The teacher then begins to ask the questions, such as, 'Should a pie have a top and a bottom, yes, or no?' Students answer by moving to either 'yes' or 'no' or along the continuum. Select students to justify their position and discuss. Ask another question, such as, 'Is apple pie the most popular pie in the world, yes, or no?', etc.
 - Remind students to be ready to implement the recipe and make a golden galette in the next lesson.

Students

- Use a concept map to review the processes and procedures from the previous production lesson. Submit the completed Lesson 5 worksheet: *Pie by design (nutrients)* for teacher review and the Lesson 5 worksheet: *Pie by design (fillings and food ticket)* for the formative assessment (Appendix B).
- View teacher illustrations of a galette; students to note base and filling (savoury or sweet) and ingredients available for production.
- Determine food produce sourced and produced locally and regionally; clarify regions in Western Australia and Southeast Asia.
- Observe the teacher demonstrate how to make the preferred base. Consider design features of the galette, equipment/utensils, ingredients, and method.
- Note the processes to prepare the vegetables and fruit, construction of the pie and baking procedure.
- Work collaboratively with a partner to develop a storyboard to plan and share the production of either a savoury or sweet galette, including an outline of timing.
- Consider the main concepts in how to produce the galette, role in production, workflow and timing.
- Plan the recipe design including title, ingredients, equipment/utensils, steps and presentation.
- Produce a photographic/video record to illustrate 'how to make a galette, from design to presentation', and present this as either a storyboard for the class display gallery or as a short movie.
- If time permits, participate in a revision of the concept 'easy as pie' through a 'yes/no' class quiz.



Lesson conclusion

- Display the storyboard for the savoury or sweet galette to demonstrate the production processes.
- Participate in the 'yes/no' class quiz.



Lesson 9: Produce a golden galette

The Western Australian Curriculum content addressed in this lesson is below.

Design thinking skills

Project management

- Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions

Producing and implementing

- Implement agreed protocols and use a range of technologies, components and/or equipment to produce designed solutions

Lesson outline

| Learning intentions |
|--|
| <p>Students will:</p> <ul style="list-style-type: none">• Revise the common features of a recipe, particularly the method and time plan.• Revise procedures for accurately measuring dry ingredients and liquids.• Use agreed protocols to produce a food product, a golden galette, considering time and available resources. |

Preparation for the lesson

- Ensure ingredients, equipment, utensils and bakeware are accessible for students, including an egg-wash station.
- Check that the class food order is complete and accurate, identify any nuances, substitutes, etc.

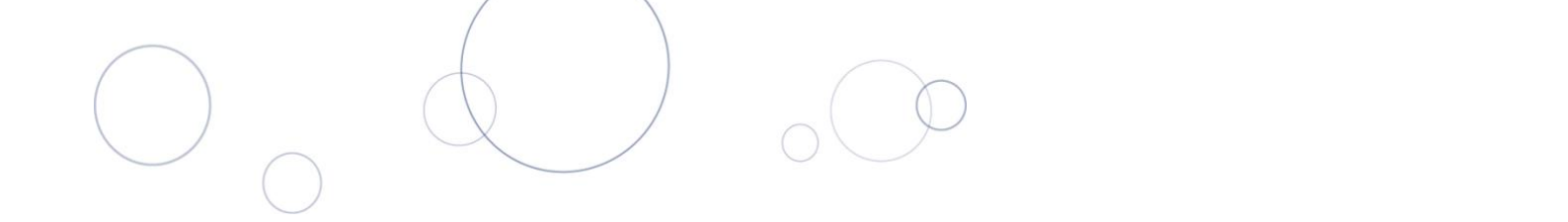
Teaching and learning experiences

Students – prior knowledge

- Are familiar with the set-up of equipment and workflow within the classroom, including awareness of safe practices in handling sharp objects, using hot saucepans, managing the oven, spillages and waste
- Are able to use correct equipment/utensils to accurately measure dry ingredients and liquids
- Know who they have been allocated to work with from the previous lesson.

Teacher

- Before beginning, review the given task, its purpose, nuances with the food order and procedures, and establish the latest time the galette must be in the oven. Remind students to follow the storyboard plan and work collaboratively. Inform students that they will be sampling both the savoury and sweet version of the galette (share with another group).
- Ask pairs of students to discuss their plan (storyboard) and run through recipe requirements for the base and the filling and answer any questions. Consider opportunities for photographs and/or video.
- Monitor student progress, safety procedures, interpretation of procedures and time management strategies for the production of the golden galette.

- 
- Remind students to work collaboratively to wash up, store equipment, clear waste and clean surfaces.
 - Ask students to serve the golden galette for the teacher to view and also to photograph the dish to assist in evaluation.

Students

- Follow the method and break down each step to produce the golden galette. Revise recipe requirements, skills and procedures, including accurate measurement, oven management, serving procedure and management of filming/photographs during production.
- Set up equipment and ingredients for the base and the filling.
- Manage and monitor progress to finish the recipe according to planned timing, using safe procedures and processes.
- Work collaboratively to wash up efficiently, store equipment, clear waste and clean surfaces at the conclusion of production.
- Serve food for the teacher and other students to view. Photograph and/or video the end product, including a description of the dish and the presentation technique. Students to complete an evaluation of the sensory and physical properties of the sweet and savoury golden galettes.

Conclusion

- Formative assessment:
 - display the final product and storyboard for teacher/student review
 - take photos or a video of the golden galette
 - compare the actual processes with the outline provided in the storyboard
 - discuss in pairs and note on the storyboard any issues or suggested changes
 - taste the galette
 - describe the physical and sensory properties and the presentation technique in both versions of the galette.



Lesson 10: Golden galette – from design to taste

The Western Australian Curriculum content addressed in this lesson is below.

Design thinking skills

Designing

- Design processes and solutions with given technologies and techniques, using appropriate technical terms

Evaluating

- Use given contextual criteria to evaluate design processes and solutions

Lesson outline

| Learning intentions |
|---|
| Students will: <ul style="list-style-type: none">• Apply given contextual criteria to evaluate steps to collaboratively produce a golden galette. |

Preparation for lesson

- Display storyboard documents, comments and presentation photographs to form a gallery walk or upload movies to the shared class drive.
- Review the Rating guide (Appendix B) and adjust to reflect the class situation. This guide is completed electronically.
- Ingredients for ratatouille (or similar) for use as pie filling to be available to students for the summative assessment task.
- Ingredients for savoury mince (or similar) for use as pie filling to be available to students for the summative assessment task.
- Predetermine any additional components to be made available for students to make nutritional adjustments to the base recipes, ratatouille, savoury mince and fruit filling.


Teaching and learning experiences

Students – prior knowledge

- Understand strategies to work collaboratively to prepare and produce pie fillings
- Are capable of essential knife skills to chop, dice, slice, etc. to prepare the pie fillings
- Are able to safely work through steps of a recipe, including clean up and packaging, to prepare class batches of pie fillings.

Teacher

- Revise the review process from the previous lesson, production of the golden galette. Display the students' storyboard/method with comments and the design process.
- Assign each storyboard a number, then allocate each student four numbers (or more if time permits) to independently review, rate and comment.

- 
- Distribute the Rating guide (Appendix B) and outline to students the format. Explain, with the use of examples, evidence to look for to achieve a rating of five, as opposed to a rating of one. At the end of the review session, each pair will have received extensive feedback on their design process.
 - Allow three minutes per review for students to provide honest and positive reviews.
 - Discuss the findings as a class and identify the main concepts observed through the process.
 - Decide the overall success of the golden galette, identify common issues and suggest reasons and possible solutions.
 - Allow time for students to review the feedback.
 - Introduce the *My design, my pie* summative assessment task (Appendix C). Students work independently to design and produce a pie of their choice, while considering the constraints outlined in the next lesson. Note: The teacher should determine the constraints; for example, the costs, availability of produce, nutritional value and cultural influences may impact on the final decisions made regarding food selections.
 - Introduce the summative assessment task only as students move into producing the various fillings this lesson.
 - Explain that students will assist in preparing and producing batches of ratatouille (or similar) and batches of a savoury mince (or similar) filling.
 - Allocate preparation tasks to individuals and pairs with students working together to safely prepare vegetables, fry onion, garlic and meat, etc. Package and store fillings until needed.
 - Ensure students work together to clean up, including stove top, benches and equipment.

Students

- Review the Rating guide (Appendix B) and participate in the class discussion about how to review and rate the storyboards.
- Complete the Rating guide (Appendix B).
- Participate in the class discussion to review the Rating guide and identify the main issues/suggest strategies to overcome these issues.
- Review the feedback given.
- Prepare and produce fillings for the *My design, my pie* summative assessment task (Appendix C), working cooperatively and safely to clean up and package the fillings.

Conclusion

As a pair, review the feedback provided on the production of the golden galette.



Lessons 11–12: My design, my pie

The Western Australian Curriculum content addressed in these lessons is below.

Contexts

Food specialisations

- Sensory properties and nutritional value of foods determine preparation, production and presentation techniques
- Social and ethical considerations for the design and development of meals and specialised food products, including ways products evolve locally to achieve designed solutions

Design thinking skills

Project management

- Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions

Investigating and defining

- Investigate and define the problem and requirements of a given design brief
- Break down a given design brief, identifying and defining the purpose and competing considerations
- Consider given technologies, resources and/or components to develop solutions

Designing

- Design processes and solutions with given technologies and techniques, using appropriate technical terms

Evaluating

- Use given contextual criteria to evaluate design processes and solutions

Teaching and learning experiences

Summative assessment task (Appendix C)

Preparation for the task

- Establish the list of ingredients, or constraints, available to students for the design of their pie.



Appendix A

Resources

Resources

| Lesson | Resource | Link/information |
|--------|--|--|
| 1 | Apple crumble (or Fruit crumble) Suggested recipe | <ul style="list-style-type: none"> Jamie Oliver. <i>Classic apple crumble</i>. https://www.jamieoliver.com/recipes/fruit-recipes/classic-apple-crumble/ |
| | Graphic organisers | <ul style="list-style-type: none"> Getting it together From colonies to federation. https://getting-it-together.moadoph.gov.au/teacher-guide/graphic-organisers.html |
| | Nutrients | <ul style="list-style-type: none"> Australian Government Department of Health. <i>Nutrients</i>. https://www.health.gov.au/health-topics/food-and-nutrition/about |
| 6 | Regional areas of Western Australia | <ul style="list-style-type: none"> Government of Western Australia Department of Primary Industries and Regional Development. <i>Our WA Regions</i>. https://www.wa.gov.au/organisation/department-of-primary-industries-and-regional-development |
| | iMovie | <ul style="list-style-type: none"> iMovie. https://www.apple.com/au/imovie/ |
| | Green screen by Do Ink | <ul style="list-style-type: none"> ndanielsonbartelt. <i>How to use the Green Screen App by Do Ink</i> https://www.youtube.com/watch?v=iyB9u_UBlxA |
| | Animate Green screen by Do Ink | <ul style="list-style-type: none"> Do Ink. <i>How to animate props in green screen by Do Ink 2019</i> https://www.youtube.com/watch?v=W_FfxYJbtHs Do Ink. (2013, October 29). Easy-to-use green screen by Do Ink App enable creation of green screen effects on iPhone and iPad. https://www.youtube.com/watch?v=QIH3h19abll |



Appendix B

Formative assessment task



Lesson 1 worksheet: What's the recipe?

Name: _____

Date: _____

1. Suggest a suitable name for the recipe: _____
2. Predict the ingredients, quantities and equipment/utensils required to prepare the recipe.

| Ingredients (components) | Quantity | Equipment/utensils |
|--------------------------|----------|--------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |



3. Predict the method required to prepare the recipe. Use a flow chart, series of dot points or storyboard.

4. Explain **two** ways to present the dish to improve its visual appeal.

One:

Two:

Lesson 2 worksheet: It's a crumble (nutrients)

Name: _____

Date: _____

Complete the table to review the nutritional value of each ingredient in an apple crumble.

Provide two other food sources for each nutrient identified.

Apple crumble nutrients

| Topping | Nutrient | Role in the body | Other food sources |
|---------|----------|------------------|--------------------|
| flour | | | 1. 2. |
| butter | | | 1. 2. |
| Filling | Nutrient | Role in the body | Other food sources |
| apple | | | 1. 2. |
| sugar | | | 1. 2. |
| lemon | | | 1. 2. |
| other | | | |

Identify nutrients that are not included in an apple crumble.

Describe the nutritional value of an apple crumble.

Improve the nutritional value and/or flavour of apple crumble by altering the ingredients using the food constraints in the table below.

Food constraints

| Topping (select 1–2) | Filling (select 1) | Filling (select 1–2) |
|---|-------------------------------------|---|
| 2 tablespoons rolled oats | 1 tablespoon dried cranberries | $\frac{1}{8}$ – $\frac{1}{4}$ teaspoon cinnamon |
| 1 tablespoon coconut | 1 tablespoon dried/fresh quandong | $\frac{1}{8}$ teaspoon cloves |
| $\frac{1}{8}$ – $\frac{1}{4}$ teaspoon cinnamon | 1 tablespoon sultanas | 1 tablespoon coconut |
| 2 teaspoons flaked almonds | Replace 1 apple with 1 pear | 2 teaspoons flaked almonds |
| 1 tablespoon pepitas | Replace 1 apple with seasonal fruit | Replace sugar with 1 tablespoon of honey |
| 1 tablespoon sunflower seeds | 1 tablespoon pepitas | 1 tablespoon sunflower seeds |
| | 1 tablespoon sunflower seeds | |



Food ticket

Complete the food ticket to submit your request for additional food (based on the constraints).

Include a reason for adding or removing the food. For example, add almonds to increase protein content of the apple crumble.

Submit the food ticket at the end of the lesson.

| Food ticket | |
|---------------------|---------------------------------|
| Name: | _____ |
| Add _____ | to _____ |
| _____ | |
| Add _____ | to _____ |
| _____ | |
| Remove _____ | and replace with _____ to _____ |
| _____ | |
| Date of production: | |



Lesson 2 worksheet: It's a crumble (evaluation)

Evaluating – Apple crumble

Name:

Date:

Use the given contextual criteria to evaluate the design processes (steps) used to produce apple crumble.

1. Identify and describe the use of one item of equipment or a utensil required to produce an apple crumble. (3 marks)

Blank area for answer to question 1.

2. Explain how sensory properties encourage people to eat the apple crumble. (3 marks)

Blank area for answer to question 2.

3. Describe a process used to prepare the apple filling. (2 marks)

Blank area for answer to question 3.



4. Describe one way to adjust the apple crumble ingredients to improve nutritional value.

(2 marks)

5. Justify why apple crumble is 'easy as pie' to produce.

(4 marks)

Marking key

| Description | Marks |
|---|------------|
| 1. Identify and describe the use of one item of equipment or a utensil required to produce apple crumble. | |
| Identifies an item of equipment or a utensil | 1 |
| Describes the use of an item of equipment/utensil required to produce an apple crumble | 2 |
| Outlines the use of an item of equipment/utensil required to produce an apple crumble | 1 |
| Total | /3 |
| 2. Explain how sensory properties encourage people to eat the apple crumble. | |
| Explains how sensory properties encourage people to eat the apple crumble | 3 |
| Describes how sensory properties encourage people to eat the apple crumble | 2 |
| States how a sensory property encourages people to eat the apple crumble | 1 |
| Total | /3 |
| 3. Describe a process used to prepare the apple filling. | |
| Describes a process used to prepare the apple filling | 2 |
| Outlines a process used to prepare the apple filling | 1 |
| Total | /2 |
| <p>Answers could include:</p> <ul style="list-style-type: none"> • Prepare the apple – wash, peel, core, dice, etc. Ensure apple pieces are diced to a similar size. Place apple pieces into prepared dish. • Prepare the apple – wash, leave unpeeled, core, thinly slice. Ensure apple pieces are sliced to a similar size. Partially cook sliced apple in a saucepan with water, cinnamon and sugar. Place cooked apple pieces into prepared dish. <p>Accept other relevant answers.</p> | |
| 4. Describe one way to adjust the apple crumble ingredients to improve nutritional value. | |
| Describes one way to adjust the ingredients to improve nutritional value | 2 |
| States one way to adjust the ingredients to improve nutritional value | 1 |
| Total | /2 |
| 5. Justify why apple crumble is 'easy as pie' to produce. | |
| Justifies why apple crumble is 'easy as pie' to produce | 4 |
| Explains why apple crumble is 'easy as pie' to produce | 3 |
| Describes why apple crumble is 'easy as pie' to produce | 2 |
| Outlines why apple crumble is 'easy as pie' to produce | 1 |
| Total | /4 |
| Assessment total | /14 |



Lesson 5 worksheet: Pie by design (nutrients)

Name: _____

Date: _____

List the ingredients for a savoury pie and review the nutritional value of each ingredient.

Improve the nutritional value and/or flavour of the savoury pie by altering the ingredients and note the role in the body.

Nutrient table

| Ingredients | Nutrient | Role in the body |
|------------------------|----------|------------------|
| Pie shell | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Ratatouille filling | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Additional ingredients | | |
| | | |
| | | |

Describe the nutritional value of the savoury pie.

Lesson 5 worksheet: Pie by design (fillings and food ticket)

Name: _____

Date: _____

Task: Design and produce a simple, easy to prepare food product (pie). The constraints for the pie design may include improved nutritional value, appealing sensory properties, a range of food preparation techniques/processes, and is completed within the given timeframe.

Note: teacher to decide constraints – may use the suggested constraints, above or select their own and adapt the worksheet accordingly.

Filling: approximately half a cup of the ratatouille filling

Pie shell: select either pancake or filo pastry

Additional ingredients

| For the filling, select additional foods from the list | | |
|--|-------------------------------|-----------------------------|
| 1–2 serves | 1 serve only (protein option) | 1 serve only (dairy option) |
| spinach leaves | 1 tablespoon pepitas | 30 g cheese |
| pea/bean shoots | 1 tablespoon sunflower seeds | 1 tablespoon ricotta |
| baby bok choy | | 30 g feta |
| spice (name) | | |
| | | |
| | | |

Filling: complete a food ticket for additional ingredients.

Justify your selection/replacement/substitution for each extra ingredient.

Food ticket

Name: _____

Add _____ to _____

Add _____ to _____

Remove _____ and replace with _____ to _____

Date of production: _____



Design thinking skills

(22 marks)

1. Provide a suitable name for the pie. Outline why the name is suitable.

(2 marks)

Title:

Outline:

2. Develop a sequential method to produce the pie, include realistic time allocations for specific tasks or skills. Illustrations may be used.

(3 marks)



3. Describe the design technique you plan to use to decorate the pie. (2 marks)

4. After production, use the following questions to evaluate the design process for the savoury pie. Design features, such as appearance, shape, colour, size and texture, contribute to the appeal of a food product.

a) Explain how the design features used made the pie look appetising. (3 marks)

b) Describe **two** processing techniques used to produce the pie. (4 marks)

One: _____

Two: _____



Review the planned method or production process used to make the pie.

- c) Identify an issue which affected production. Discuss the accuracy and sequencing of the planned method and include time allocations. (3 marks)

Issue: _____

Discuss: _____

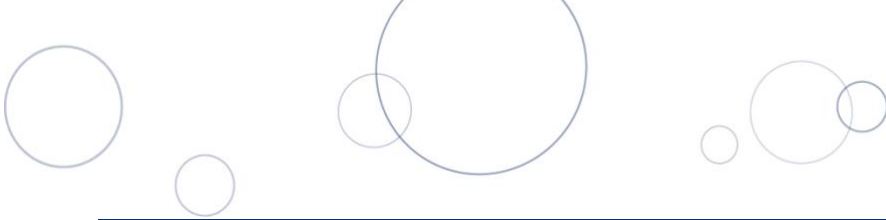
- d) Explain how preparation techniques made the pie 'easy as pie' to produce. (3 marks)

- e) Describe **one** way the nutritional value of the pie can be improved. (2 marks)

Marking key

| Description | Marks |
|---|-----------|
| 1. Provide a suitable name for the pie. Outline why the name is suitable. | |
| Provides a suitable name for the pie. | 1 |
| Outlines why the name is suitable. | 1 |
| Total | /2 |
| 2. Develop a sequential method to produce the pie, including realistic time allocations for specific tasks or skills. | |
| Develops a sequential method to produce the pie, including realistic time allocation for specific tasks or skills | 3 |
| Develops a method to produce the pie and considers time allocations for some tasks or skills | 2 |
| Outlines a method to produce the pie with limited consideration of timing | 1 |
| Total | /3 |
| 3. Describe the design technique you plan to use to decorate the pie. | |
| Describes the design technique to decorate the pie | 2 |
| Outlines the design technique to decorate the pie | 1 |
| Total | /2 |
| <p>Answers could include:</p> <ul style="list-style-type: none"> • Cutter/shapes – use a range of different shaped cutters to cut out a range of pastry shapes to create a design. This could include hearts, leaves, letters, stars, etc. • Braids – Pinch together the ends of three long strips of pastry and fold them over each other to create a braid. Arrange the braid around the edges of the pastry • Lattice/weaving – use strips of pastry to layer over and under each other to create a woven look. This technique still allows steam to escape <p>Accept other relevant answers.</p> | |
| 4. a) Explain how the design features used made the pie look appetising. | |
| Explains how the design features are used to make the pie look appetising | 3 |
| Describes how the design features are used to make the pie look appetising | 2 |
| Outlines how the design feature are used to make the pie look appetising | 1 |
| Total | /3 |

| Description | Marks |
|--|-----------|
| 4. b) Describe two processing techniques used to produce the pie. | |
| For each description (2 x 2marks) | |
| Describes the processing technique used to produce the pie | 2 |
| Outlines a processing technique used to produce the pie | 1 |
| Total | /4 |
| Answers could include: <ul style="list-style-type: none"> • Chopping spinach – wash, gently shake to remove excess water, and trim, hold sharp knife and thinly slice each spinach leaf. Ensure spinach pieces are of similar size. Place into bowl. Repeat process for remaining ingredients • Mix and combine ingredients in bowl • Prepare the filo pastry – cut pastry into long, even width strips, melt butter over gentle heat, brush each length of pastry • Make triangle shapes – place spoonful of filling on bottom edge of filo strip. Fold into triangle shape, repeat process • Brush surface of each triangle shape with melted butter, sprinkle with sesame seeds Accept other relevant answers. | |
| 4. c) Identify an issue which affected production. Review the accuracy and sequencing of the planned method and time allocations. | |
| Identifies an issue | 1 |
| Subtotal | /1 |
| Reviews the accuracy and sequencing of the planned method and time allocations | 2 |
| Outlines the accuracy or sequencing of the planned method, with limited or no reference to time | 1 |
| Subtotal | /2 |
| Total | /3 |
| 4. d) Explain how preparation techniques made the pie ‘easy as pie’ to produce. | |
| Explains how preparation techniques made the pie easier to produce | 3 |
| Describes how preparation techniques made the pie easier to produce | 2 |
| Outlines how a preparation technique helped to make the pie | 1 |
| Total | /3 |
| 4. e) Describe one way the nutritional value of the pie can be improved. | |
| Describes one way the nutritional value of the pie can be improved | 2 |
| Outlines one way the nutritional value of the pie can be improved | 1 |
| Total | /2 |
| Answers could include: <ul style="list-style-type: none"> • Add a protein source, such as chicken or beef to the ratatouille filling. This would assist with muscle growth and repair | |



| Description | Marks |
|--|------------|
| <ul style="list-style-type: none">• Add additional vegetables such as peas or corn to the pie filling. This will increase the fibre content and add additional vitamins and minerals• Reduce the amount of fat/oil used to cook the filling. Less fat would ensure the consumer does not overconsume fat and would reduce the overall calorie content of the meal <p>Accept other relevant answers.</p> | |
| Assessment total | /22 |

Lesson 10 worksheet: Golden galette – from design to taste

Rating guide

The rating range is 1–5, where 5 is the highest rating. Circle the rating and provide a comment to justify the rating. Complete the ratings for at least four storyboards.

Golden galette storyboard number _____

Produced by _____ and _____

| Description | Mark | | | | |
|---|------|---|---|---|---|
| Presentation: includes a title, brief introduction, design idea and storyboard layout | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| Provides a complete list of ingredients | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| Considers elements of design (shape, size, etc.) | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| Set of sequential steps | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| Evidence the group worked collaboratively | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| Final product looks like the planned design idea | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |

Rating completed by: _____



Appendix C

Summative assessment task

My design, my pie



Task details

| | |
|---------------------------------|--|
| Title | My design, my pie |
| Description | Students design, produce and evaluate a nutritious individual pie, suitable to be served at a family meal, based on the processes and skills developed during the previous set of lessons. |
| Ways of assessing | Practical application of a planned design, observation and evaluation |
| Evidence to be collected | annotated design; method to create a solution; list of ingredients (components); list of equipment/utensils (technologies required); final product; evaluation using the given contextual criteria |
| Suggested time | Two one-hour lessons in class |
| Differentiation | Teachers should differentiate their teaching and assessment to meet the specific needs of their students, based on their level of readiness to learn and their need to be challenged. Where appropriate, teachers may either scaffold or extend the scope of this assessment task. |

Content descriptions

Context: Food specialisations

- Sensory properties and nutritional value of foods determine preparation, production and presentation techniques
- Social and ethical considerations for the design and development of meals and specialised food products, including ways products evolve locally to achieve designed solutions

Design thinking skills

Project management

- Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions

Investigating and defining

- Investigate and define the problem and requirements of a given design brief
- Break down a given design brief, identifying and defining the purpose and competing considerations
- Consider given technologies, resources and/or components to develop solutions

Designing

- Design processes and solutions with given technologies and techniques, using appropriate technical terms

Evaluating

- Use given contextual criteria to evaluate design processes and solutions

Resources

- Assessment task template, *My design, my pie* (Appendix C)
- Pre-prepared pie fillings produced in Lesson 10.



Instructions for teacher

The assessment task, *My design, my pie* (Appendix C), may be modified based on prior learning, available ingredients, and access to equipment and resources. If students did not complete the Food specialisations context in Year 6, more attention will need to be given to the principles of food preparation for healthy eating.

A teaching and learning program and student work samples located on the Authority website may assist teachers' understanding of the knowledge, skills and standards expected before starting the planned assessment task.

Allocate time to clarify the given contextual criteria for the evaluation. This should occur at the beginning of the task. Allocate time to review and discuss design ideas, production processes (method) and a final solution before students independently evaluate the result (an individual pie suitable to serve at a family meal), based on the given contextual criteria provided.

Determine the constraints for this task based on previous lessons. For example, the costs, availability of produce, nutritional value and cultural influences may impact on the final decisions made regarding food selections.

Instructions to students

Practise food preparation techniques learnt in the previous lessons before starting the assessment task.

Be prepared to modify your initial design to incorporate peer feedback. Focus on the design process and the method developed and designed to solve a problem.

Flexibility is key, as it may be necessary to adjust the ingredients due to factors, such as seasonal conditions, costs and food availability. Changes may also be needed due to availability of resources and specialised equipment.



Assessment task: My design, my pie worksheet

Name: _____

Date: _____

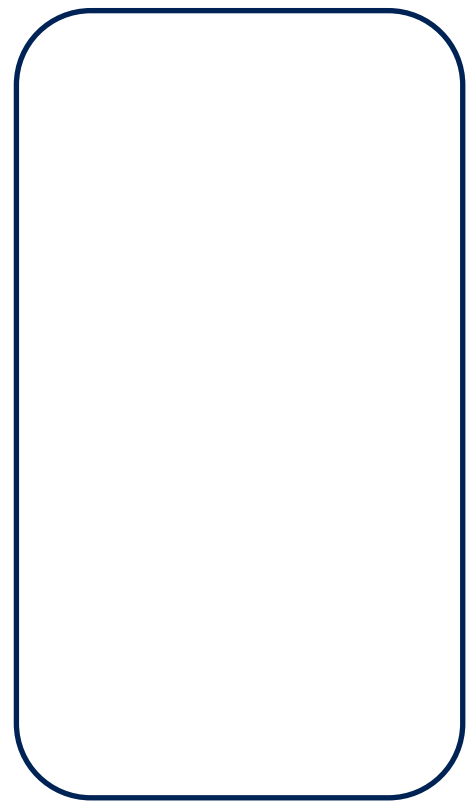
Design, produce and evaluate a nutritious pie, suitable to serve at a family meal, based on the processes and skills developed in the previous lessons.

Before you begin, read the given contextual criteria which will be used to evaluate the design. Consider availability of ingredients, cost and nutritional value.

1. Describe the purpose of the task. (2 marks)

Design ideas

Consider the design features of pies you observed from earlier lessons. Brainstorm your ideas here:





Discuss pie design ideas

- Develop designs with annotations and the use of technical terms to describe the main features of the planned pie design. Design 2 will be taken through to production.

Design instructions for the pie:

- sketch a design idea on the Design 1 template below. Use the rapid design process, (suggested time five minutes)
- annotate, using appropriate technical terms, describing design features, such as shell shape, colour, size, filling, flavour and presentation techniques
- pass your annotated design to a reviewer.

The reviewer will review your initial design and provide feedback, either written or discuss with you. They will:

- provide two aspects they like about the design
- provide two suggestions to improve the design.

Based on the reviewer's recommendations:

- use the Design 2 template to modify the design to incorporate the feedback
- consider the addition of colour, flavour, texture, etc.
- take five minutes to finalise the design you will take into production.

2. a) Design 1

Time allocation: five minutes

Develop a rapid sketch for a proposed pie. Considering the given contextual criteria, annotate, using appropriate technical terms to identify features, components (ingredients), size, colour and other relevant information. (4 marks)



Reviewer feedback

Two aspects I like about the design:

One: _____

Two: _____

Two suggestions for improvement:

One: _____

Two: _____

Design 2

The modified design incorporating feedback.



2. b) Identify one modification made to the original pie design and describe the improvement to the pie. (3 marks)

Modification: _____

Description: _____

Production phase

Plan the method, processes and techniques required to make and present a nutritious pie.

3. a) List the required equipment/utensils for production. (2 marks)

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

3. b) List the ingredients and quantities required to produce the pie. (3 marks)

| Ingredient | Quantity | Ingredient | Quantity |
|------------|----------|------------|----------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



3. c) Develop a sequential method for production. (2 marks)

Follow this method to produce your nutritious pie.

3. d) Identify two safety factors and describe a way to incorporate one into the method for safe production of the pie. (4 marks)

Factor one: _____

Factor two: _____

Description of a way to incorporate one safety factor into the method: _____

4. a) Identify **two** sensory properties and describe how **one** property impacted the appearance of the cooked pie. (4 marks)

Property one: _____

Property two: _____

Description of how one sensory property impacted the appearance of the pie: _____



4. b) Evaluate the nutritional value of the pie with reference to the *Australian Dietary Guidelines*.
(3 marks)



Evaluation

Evaluate the pie you produced using the given contextual criteria.

Teacher: Below are sample contextual criteria.

| |
|--|
| 5. a) Explain why 'easy as pie' is an appealing solution for a family meal. (3 marks) |
| |
| 5. b) Identify a design feature of the pie, such as colour, shape or size and describe its purpose in the pie. (3 marks) |
| |
| 5. c) Describe two processing techniques used to produce the pie. (4 marks) |
| |
| 5. d) Describe a design technique used to decorate the pie. (2 marks) |
| |

Marking key

| Description | Marks |
|---|-----------|
| 1. Describe the purpose of the task. | |
| Describes the purpose of the task | 2 |
| Outlines the purpose of the task | 1 |
| Total | /2 |
| 2. a) Develop a rapid sketch for a proposed pie. Considering the given contextual criteria, annotate, using appropriate technical terms to identify features, components (ingredients), size, colour and other relevant information. | |
| Develops a rapid sketch for a pie | 1 |
| Subtotal | /1 |
| Develops annotations which reference the criteria, uses technical terms and identifies a range of appropriate features | 3 |
| Develops annotations with some reference to the criteria, uses mostly technical terms and identifies appropriate features | 2 |
| Uses minimal annotations with little to no reference to the criteria, limited use of technical terms and identifies some features | 1 |
| Subtotal | /3 |
| Total | /4 |
| 2. b) Identify one modification made to the original pie design and describe the improvement to the pie. | |
| Identifies a modification | 1 |
| Subtotal | /1 |
| Describes the improvement to the pie design | 2 |
| Outlines an improvement to the pie design | 1 |
| Subtotal | /2 |
| Total | /3 |
| 3. a) List the required equipment/utensils for production. | |
| Develops a comprehensive list of required equipment/utensils | 2 |
| Develops a limited list of equipment/utensils | 1 |
| Total | /2 |
| 3. b) List the ingredients and quantities required to produce the pie. | |
| Develops a comprehensive list of ingredients with an appropriate quantity for each | 3 |
| Develops a mostly complete list of ingredients with an appropriate quantity for each | 2 |
| Develops a limited list of ingredients, with or without an appropriate quantity for each | 1 |
| Total | /3 |

| Description | Marks |
|---|-----------|
| 3. c) Develop a sequential method for production. | |
| Develops a sequential method for production | 2 |
| Develops a method for production, with some elements missing | 1 |
| Total | /2 |
| 3. d) Identify two safety factors and describe a way to incorporate one factor into the method for safe production of the pie. | |
| Identifies safety factor (2 x 1 mark) | 2 |
| Subtotal | /2 |
| Describes a way to incorporate one factor for safe production | 2 |
| Outlines a way to incorporate one factor for safe production | 1 |
| Subtotal | /2 |
| Total | /4 |
| 4. a) Identify two sensory properties and describe how one property impacted the appearance of the cooked pie. | |
| Identifies sensory property (2 x 1 mark) | 2 |
| Subtotal | /2 |
| Describes how the sensory property impacted the appearance of the cooked pie | 2 |
| Outlines how the sensory property impacted the appearance of the cooked pie | 1 |
| Subtotal | /2 |
| Total | /4 |
| 4. b) Evaluate the nutritional value of the pie with reference to the <i>Australian Dietary Guidelines</i>. | |
| Evaluates the nutritional value of the pie with reference to the <i>Australian Dietary Guidelines</i> | 3 |
| Describes the nutritional value of the pie with reference to the <i>Australian Dietary Guidelines</i> | 2 |
| Outlines the nutritional value of the pie with limited reference to the <i>Australian Dietary Guidelines</i> | 1 |
| Total | /3 |
| 5. a) Explain why 'easy as pie' is an appealing solution for a family meal. | |
| Explains why 'easy as pie' is an appealing solution for a family meal | 3 |
| Describes why 'easy as pie' is an appealing solution for a family meal | 2 |
| Outlines why 'easy as pie' is an appealing solution for a family meal | 1 |
| Total | /3 |

| Description | Marks |
|--|------------|
| 5. b) Identify a design feature of the pie, such as colour, shape or size and describe its purpose in the pie. | |
| Identifies a design feature | 1 |
| Describes the purpose of the identified design feature | 2 |
| Outlines the purpose of the identified design feature | 1 |
| Total | /3 |
| 5. c) Describe two processing techniques used to produce the pie. | |
| For each description (2 x 2 marks) | |
| Describes a processing technique, (such as chopping, grating, folding filo pastry, cooking pancake batter) used to produce the pie | 2 |
| Outlines a processing technique used to produce the pie | 1 |
| Total | /4 |
| 5. d) Describe a design technique used to decorate the pie. | |
| Describes a design technique used to decorate the pie | 2 |
| Outlines a design technique used to decorate the pie | 1 |
| Total | /2 |
| Assessment total | /39 |

