**Using formative assessment rubrics in Design and Technologies**

Planning and managing in Food Technology Levels 3–10

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**What is formative assessment?**

Formative assessment is any assessment that is used to improve teaching and learning. Best-practice formative assessment uses a rigorous approach in which each step of the assessment process is carefully thought through.

Assessment is a three-step process by which evidence is collected, interpreted and used. By definition, the final step of formative assessment requires a use that improves teaching and learning.

For the best results, teachers can work together to interrogate the curriculum and use their professional expertise and knowledge of their students to outline a learning continuum including a rubric of measurable, user-friendly descriptions of skills and knowledge. Teachers can draw on this learning continuum and rubric to collect evidence of each student’s current learning in order to provide formative feedback and understand what they are ready to learn next.

The VCAA’s *Guide to Formative Assessment Rubrics* outlines how to develop a formative assessment rubric to collect, interpret and use evidence of student learning to plan teaching and learning. For more information about formative assessment and to access a copy of the guide, please go to the [Formative Assessment section](https://www.vcaa.vic.edu.au/foundation10/Pages/viccurriculum/formative_assessment.aspx) of the VCAA website.

**Using formative assessment rubrics in schools**

This document is based on the material developed by one group of teachers in the 2019 Formative Assessment Rubrics project. The VCAA acknowledges the valuable contribution to this resource of the following teachers: Carmel Dalton (Emmanuel College Inc.), Nicole Lett (Billanook College) and Tess Monda (Mentone Grammar College). The Victorian Curriculum and Assessment Authority partnered with the Assessment Research Centre, University of Melbourne, to provide professional learning for teachers interested in strengthening their understanding and use or formative assessment rubrics.

This resource includes a sample formative assessment rubric and task and describes how the teachers implemented the task in their schools and also includes representative student work samples.

Schools have flexibility in how they choose to use this resource, including as:

* a model that they adapt to suit their own teaching and learning plans
* a resource to support them as they develop their own formative assessment rubrics and tasks.

This resource is not an exemplar.

Additional support and advice on high-quality curriculum planning is available from the [Curriculum Planning Resource](http://curriculumplanning.vcaa.vic.edu.au/).

The formative assessment rubric

The rubric in this document was developed to help inform teaching and learning in Food Technology. This rubric supports the explicit teaching of planning and managing.

Links to the Victorian Curriculum F–10

**Curriculum area:**  Design and Technologies

Creating Designed Solutions strand

Planning and managing sub strand

**Levels/Bands:**  Levels 3 and 10

**Achievement standards extracts:** Levels 3 and 4

Students plan and sequence major steps in design and production.

Levels 5 and 6

Students record project plans including production processes.

Levels 7 and 8

Students apply project management skills to document and use project plans to manage production processes.

Levels 9 and 10

They independently and collaboratively apply sequenced production and management plans when producing designed solutions, making adjustments to plans when necessary

**Content descriptions:** Levels 3 and 4

Plan a sequence of production steps when making designed solutions [(VCDSCD032)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD032)

Levels 5 and 6

Develop project plans that include consideration of resources when making designed solutions [(VCDSCD042)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD042)

Levels 7 and 8

Use project management processes to coordinate production of designed solutions [(VCDSCD053)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD053)

Levels 9 and 10

Develop project plans to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes [(VCDSCD064)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD064)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Learning continuum**  Design and Technologies, Levels 3–10  Strand: Creating Designed Solutions  Sub-Strand: Planning and managing | | | **Phase 1** | **Phase 2** | **Phase 3** | **Phase 4** |
| Students at this phase can copy information related to producing a designed solution into a production plan. | Students at this phase identify information related to producing a designed solution in a production plan. | Students at this phase describe information related to producing a designed solution in a production plan. | Students at this phase explain information related to producing a designed solution in a production plan. |
| **Organising element** | **Action** | **Insufficient evidence** | **Quality criteria** | | | |
| Planning and managing | 1. To record production processes related to producing a designed solution in a production plan | 1.0 Insufficient evidence | 1.1 Copies major production processes in order | 1.2 Identifies in order major production processes related to producing a designed solution | 1.3 Describes the sequence of steps related to producing a designed solution | 1.4 Explains the sequence of steps related to producing a designed solution with multiple techniques. |
| 2. To record time related to producing a designed solution in a production plan | 2.0 Insufficient evidence | 2.1 Copies timing for major steps into a production plan | 2.2 Identifies timing for major steps related to producing a designed solution in a production plan | 2.3 Describes timing for concurrent steps related to producing a designed solution | 2.4 Explains timing for concurrent steps related to producing a designed solution within a specified time. |

The formative assessment task

The following formative assessment task was developed to elicit evidence of each student’s current learning and what they are ready to learn next.

Description of the task (administration guidelines)

This formative assessment task was designed to be used in a semester-long subject called ‘Masterchef’. It was used in week four of the semester. The focus of the previous weeks had been on safety and hygiene, and preparation techniques and cooking methods. The students were now required to undertake a planning and managing task that would draw upon this previous content.

This task was designed to gather evidence of student’s knowledge and understanding of planning and managing productions before creating their own designed solutions in subsequent classes. Gathering this evidence enables the teacher to differentiate their teaching, providing more support and extending students where required.

The overarching intent of this task was explained to the students, and they could then select an option that was most appealing to them. There were three options available. While the task was designed so there was increasing complexity, a teacher could use the questions from a later option and apply them to a different designed solution.

* The teacher introduces the task sheet ([Appendix 1](#Appendix1)) to the class. The first part of the task takes about 40–60 minutes. Students demonstrate their understanding of planning and managing through an analysis of a selected recipe, and creating a video or audio file related to the steps.
* In a subsequent class, students produce the recipe sequencing the steps appropriately, taking into account techniques and timing issues as identified in the first part of this task. Feedback is provided to the students on the first part of the task before they prepare the recipe. The teacher observations are also provided to the student following the preparation of the meal.

Evidence collected from this task

* Video or audio recording of student answers to the first part of the task.
* Teacher observation during the practical application.

Appendix 1

Mastering the kitchen

About the task

Since the start of the term, you have been building on your practical skills in food safety, hygiene and basic food preparation techniques.

For this task, you are to undertake a planning and management exercise before preparing a meal (designed solution). You are going to demonstrate your understanding of the processes undertaken in creating a meal, including the sequencing of the steps, and the time required for the steps.

Evidence of your understanding will be gathered in two ways:

* firstly you will submit responses to a number of questions related to production steps and time management. This will be submitted in a video or audio format.
* secondly you will prepare the meal following your production plan. The teacher will make observations about the sequencing of steps and timing.

You are able to select one of the following options. Each option has its own level of complexity. Discuss your selection with the teacher and confirm the questions as these may be varied.

Remember you are to create a video or audio file with your responses to the questions and you will be observed when you make the recipe.

Options

Option 1

You will plan, prepare and present **Chicken and hokkein noodle stir-fry**.

You will create an audio file of the production plan for two main steps in the recipe. For each step you need to answer the following questions.

Production – planning and managing:

* Describe what the step involves.
* Explain when each step should occur when preparing the recipe and how much time each will take.
* Explain why each step is important and what might happen if the step is not done in this sequence.

Recipe: Chicken and hokkein noodle stir‐fry

Ingredients

2 tbsp oil

1 chicken breast, thinly sliced

½ red capsicum

1 stalk celery, sliced

1 carrot, thinly sliced

3 shallots, sliced diagonally

125 grams hokkein noodles

1 tbsp soy sauce mixed with 2 tbsp water

Method

1. Heat oil in wok.
2. Add chicken and stir-fry until golden.
3. Add all vegetables and stir-fry for 4–5 minutes.
4. Prepare noodles by placing in a bowl of boiling water and separating.
5. Add noodles and soy sauce mixture to wok. Stir to combine, reduce heat and cover for 2 minutes before serving.

Option 2

You will plan, prepare and present **Spicy chicken dumpling and noodle soup**.

You are required to make a modification to the recipe to include an additional or alternative cooking method, and answer the following questions.

Production – planning and managing

* Describe how you modified the order of the steps in the recipe to include an additional or alternative food preparation method?
* Explain how you managed the sequencing of the steps and your time to complete this modified recipe?

Recipe: Spicy chicken dumpling and noodle soup

Ingredients

200g chicken mince

¼ tsp Chinese five-spice

1 egg white

½ –1 red chilli, deseeded, finely sliced

2 green shallots, thinly sliced

3 cups chicken stock

1½ tbsp soy sauce

1 tsp fish sauce

2 tsp brown sugar

1 garlic clove

1-cm piece ginger, thinly sliced

½ bunch bok choy

¼ carrot, julienned

2 snow peas, julienned

300g fresh hokkein noodles

Method

1. Combine mince, five-spice powder, egg white, chilli and 1 green shallot in a bowl. Mix well. Form into 12 small dumplings. Place onto a tray. Cover and refrigerate until required.
2. Bring chicken stock, soy sauce, fish sauce, sugar, garlic and ginger to the boil in a large saucepan over medium–high heat. Add dumplings. Cook for 4–5 minutes or until cooked through. Using a slotted spoon, remove dumplings to a plate. Keep warm.
3. Return stock to the boil. Add bok choy, carrot, snow peas and remaining green shallot and noodles. Cook for 2 minutes or until noodles are tender. Return dumplings to saucepan.
4. Ladle dumplings, noodles and soup into bowls. Serve immediately.

Option 3

If you have chosen this option, you will prepare and present your own recipe. This can be a combination of recipes you find, or an original recipe. You must include chicken and the recipe must enable you to demonstrate the following:

* a range of food preparation techniques and their impact on time management
* sequencing of food preparation techniques to complete recipe within timeframe

Production – planning and managing

* Describe the recipe including the food preparation methods that will be used with the ingredients.
* Describe the food preparation methods and their impact on time management
* Describe the sequencing of steps to be used and whether there will be more than one food preparation method being completed at one time.
* Explain how the sequencing of food preparation methods enabled the recipe to be completed on time.