

6087

**Food & Nutrition**

**Dummies for F&N Coursework**

**FOOD & NUTRITION COURSEWORK**

Paper 2 Coursework is the practical work done by F&N candidates during the course of study, which constitutes 60% of the overall grade of the subject. Paper 2 requires candidates to possess **problem-solving, investigative skills** and **report-writing skills**. Every candidate must submit a report of  $\leq 50$  pages for the coursework.

In every Coursework, the candidates are to craft food-based experiments and investigations that is related to a given topic. Markers will focus on the ability of candidates to:

- analyse the task question in details
- gathering information and summarising facts
- develop a plan, record and account for experimental results
- make relevant decisions on a methodical approach in relevance to results for experimentations, products and presentation of final products.
- to draw conclusions by evaluating the findings and outcomes of the entire coursework process.

F&N coursework is separated into the following parts. The maximum score obtainable from each of the segments are reflected in the table as well.

Criteria	Marks
Task Analysis	10
Research & Development	34
• Information Gathering	12
• Investigation (Experiment)	10
• Information Synthesis	12
Decision Making	10
Planning & Execution	34
Evaluation	12
Total	100 [60%]

This set of notes will cover the essence of working on a F&N coursework. Materials are obtained from the [Food and Nutrition Website for Pierce Secondary School](#) with slight modifications done by the author.

## 1. TASK ANALYSIS

The goal of the Task Analysis (TA) is to have you **critically examine** the project you have to complete and plan how you will complete the project. In other words, TA serves as a backbone of your coursework.

In Task Analysis, it is important that:

1. All the key and related factors are identified and explained
2. Ideas and concepts are organized in a systematic manner
3. Priorities are identified are specific to the task question
4. Explanations and priorities show that you are clear of the task requirement
5. You identify experimental investigations as one of the factors and priorities

The following is a typical example of a F&N Coursework question:

Fast food restaurants have been popular among Singaporeans of all ages and this could affect their future health. Explore how the dishes sold in these restaurants can be made healthier and more appetising.

(2012 P2 Q2)

The underlined words are the **key factors** identified from the questions. After identifying the key words, you have to explain and define them. A good approach in defining and explaining the terminologies is using **5W1H** (Table 1).

Table 1: 5W1Hs and their Meaning

What	Answers to 'What?' questions give you definitions to words for better understanding. They also give you answers to thinks that are or will be.
Why	Asking 'why' seeks <u>cause-and-effect</u> . If you know the reason why people have done something, then you gain a deeper understanding of them.
When	'When' seeks a location in time
Who	The question 'Who' brings people into the frame, connecting them with actions and things.
Where	'Where' seeks to locate an action or event in three-dimensional space
How	Answers to 'How' questions explain a process. 'How' is good for <u>probing</u> into deeper detail of what has happened or what will happen.

Using the same question, the following is an elaborated example of how key factors are explained and elaborated. Subsequently, you ought to show the understanding of the topic to the marker. This is done by elaborating on how the related factors or questions are related to the topic of interest.

Key Factors	Related Questions	How is this related to the task <i>(Why do you need to know this? How does it help you with your task?)</i>
Fast food restaurants	<p><b>What is fast food?</b> Fast foods are food that are served and prepared quickly. They are cheap and convenient and contain large amount of fats and energy.</p> <p><b>What is common in these restaurants?</b> Common in their cooking methods, their presentation and the way to food are sold.</p> <p><b>Where can we find Fastfood?</b> Fast Food Outlets such as McDonalds, KFC, Burger King, MOS Burger, Subway, etc.</p>	By knowing the definition of fast food, I will be able to distinguish between different food types, especially when selecting recipes for execution.

**NOTE:** You do not need to gather your knowledges and understanding from the internet to craft out your task analysis. The answers to every questions in TA is based on your **existing knowledge** of the topic. Gathering information from the internet and textbooks are used to validate your understanding of your topic.

Aside from identifying the relevant factors, you need to identify the **experimental investigation** as one of the keyfactors. You also need to identify the possible experiments you could conduct and the possible records you could make for each experiment.

Keyfactor / Keyphrase	Sub key factors & Elaboration
Investigate the effect of Moist Heat on cereals	<p><b>How Moist Heat affects Cereals?</b> Gelatinization Eg: Rice grains become soft due to starch grains absorbing water swelling and bursting</p> <p><b>What are the different types of Cereals?</b> May be rice, oat, wheat, rye, corn, barley</p>

6087

**Food & Nutrition**

**Dummies for F&N Coursework**

	<p><b>Possible experimental ideas (at least 3 should be listed)</b></p> <ul style="list-style-type: none"><li>• Vary the temperature</li><li>• Vary the duration of the cooking time</li><li>• Vary the types of cereals using the same timing and method of cooking</li></ul> <p><b>Possible data collection methods</b></p> <ul style="list-style-type: none"><li>• Radar chart for sensory characteristics</li><li>• Use rating scales</li><li>• Photographs Eg: Before and after</li></ul> <p><b>Possible sensory characteristics that can be tested on cooked vegetables</b></p> <p>Colour Flavour (Eg: Sweetness, bitnessness) Texture (Eg: Crunchiness, Smoothness, Grainy)</p>
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After you have analysed your task, you have to **set your task priorities**. Based on the list of related questions and answers, decide **what it is that you need to do** in order to validate the answers to those questions. Also explain how the information will help you to complete your task.

For example, does the information that you are going to find:

- Help you in choosing recipes/ingredients/cooking methods?
- Help you to understand the process to complete/ensure something?

A short excerpt of priorities:

“In the **development** part of the Coursework, I will identify a subject of interest by considering variables such as age, BMI, gender, level of activity and family background. To improve the healthiness of fast food, I will record down his daily meals to spot out dishes that are healthy, but have rooms for more improvement in terms of its nutritive values.”

After completing the priorities, TA also requires you to do a **third task** which is to draft out an **overall time plan** for the Coursework. This task requires you to plan how you will progress and complete the project and set a dead-line for each step.

6087

**Food & Nutrition**

**Dummies for F&N Coursework**

**Things to note in Overall Time Plan:**

1. All sections must be included in coursework, and not just a generic list of the steps.
2. It **MUST** include specific details related to your task and list as many of the things that you will need to do in order to complete the coursework. Refer to the example below of a good and bad priority list for task analysis.
3. Set realistic deadlines and stay disciplined about meeting the deadlines!
4. Include your objectives and rationale for each step that you take. This is the **WHY** of what you are doing. This ensures you don't do what is not necessary and thus waste time.

BAD ☹	GOOD ☺
<p style="text-align: center;">Procedures</p> <ol style="list-style-type: none"><li>1. Identify all the keywords in the question and define them</li><li>2. Link definitions of keyword back to the task</li></ol>	<p style="text-align: center;">Procedures</p> <ol style="list-style-type: none"><li>1. I will identify the keywords in the task 'xxxxx'. This will focus me on the important aspects of my task.</li><li>2. Define all the keywords of the task using a dictionary keeping in mind that the definitions should be in relation to the task. Knowing the definitions of 'xxx' will ensure that I complete my coursework correctly and not go off topic.</li><li>3. Chinese New Year falls on 2<sup>nd</sup> Feb and I will be unable to do work during this period.</li></ol>

At the end of Task Analysis, you should have successfully identified key and related factors relevant to the topic. Priorities are listed with a proper overall time plan being drafted out and adhered to.

6087

**Food & Nutrition**

**Dummies for F&N Coursework**

## **2. RESEARCH & DEVELOPMENT**

### **2.1 INFORMATION GATHERING**

Research is a segment to validate your understanding stated in your Task Analysis.

To complete the Research section of your coursework you have to do the following:

1. Gather information
2. Summarise the information
3. Include your thinking process

You must conduct research on **ALL the key words** that you identified in Task Analysis. You should also research on the type of investigative activity (development) that you are going to conduct.

For example, if your task asks you to **investigate how moist heat cooking affects starch**, you should conduct research on how temperature affects the texture, colour, flavor etc of starch.

Keep in mind that the research has to communicate ideas and concepts clearly and effectively. In other words, if you give it to your friend who doesn't study F&N, they **SHOULD** be able to understand it!

### **1. GATHERING INFORMATION**

- Look in your textbook/newspapers/magazines
- Use **trusted sources** from the Internet. Trusted sources includes Health Promotion Board's website, but excludes Wikipedia.
- Check the library for relevant books
- Conduct a survey or an interview

Try to use 2 sources of information each time you are answering a question. This allows corroboration between facts and theories to validate the relativity of your understanding. This also give your answer more depth.

Bear in mind that your research needs to be in depth and always **write in full sentences!**

## 2. SUMMARISE INFORMATION

Summarising information is the process of re-grouping and rephrasing the information of your research to improve the coherency of information. Copying straight out of a resource or '*cutting and pasting*' from a webpage is considered **PLAGARISM**.

Plagiarism is a serious offence where you extracted whole chunk of information and utilise them in your report. You are required to cite the source (URLs, titles of books and/or newspaper articles) of your facts and informations in the bibliography.

A way to improve the quality of information, while avoiding plagiarism is to combine two pieces of information together. Also, use a thesaurus to help you change words that get repeated too many times.

Summarising also means making information more concise and easy to read. For example, if you are trying to show the disadvantages and disadvantages of different cooking methods, you can express the information in a Table.

## 3. THINKING PROCESS

Thinking Processes help to show that you are thinking about the information you have gathered.

You need to ask yourself the following questions:

- a) How is the information relevant to my task?
- b) What have I learnt from the information?
- c) How can I apply the information to my task?
- d) How does it help me forward my task?
- e) Which part of the coursework does it apply to?
- f) How has it developed my thinking on the task?
- g) What are the next steps I can take with my task as a result of the information I have just gathered?

## 2.2 INVESTIGATIVE WORK

The Coursework assignment is synonymous to writing a storybook. Just like how stories transit between Chapter 1 and Chapter 2 of a storybook, there must be a smooth transition from one part of a coursework to another.

Moving on from the first part of Research & Development (information gathering) to the second, you ought to apply what you have understood from your research into your food experiments.

In investigative work, it generally involves the following steps:



Your research for investigative work should include research on:

- the types of tests or results
- research on sensory analysis for your sensory test.

You should briefly describe some of the results that you are expecting to collect or some of the chemical reactions you are expecting to see.

The following serves as a structure of this segment of the experimental work.



### 1. INTRODUCTION

An excerpt of an introduction of investigative work:

“In this section, I will be conducting an investigative activity to find out **how different types of plant oils affect cupcakes** (objective of experiment). My experiment will be looking at three different types of **oils, peanut, canola and sunflower** (variables) as I have learnt from my research that these oils are the healthiest and contain the highest amounts of saturated fats which are good for.... I have also found from my research that cupcakes are a favourite food of the elderly hence it would make sense to experiment ... From my research, I have found that the most ideal cupcakes are light and fluffy in texture, they also should be moist and a golden brown in colour as well as have good height therefore it will be these parameters that I will be collecting results on.

## 2. AIM

Your aim should state the objective of your experiment, and what are the variables that you are altering to understand your food investigation.

Aim should be written clearly, logically and in detailed, such that the experiment will be reproducible from reading it.

If you have three samples, you should name the samples 'control', 'Variable 1' and 'Variable 2' and state the type of effects the experiment will have on the product.

### Example:

To find out how different boiling times, 1 minute (control), 5 minutes (variation 1) and 10 minutes (variation 2), in 300 ml of boiling water, has on the mass, colour, taste and texture of 100g of diced (1cm x 1cm x 1cm) carrots.

#### Controls and Variables

Controls should be the 'usual' or the most commonly accepted form.

For example, if you are investigating the effect of different boiling times on carrots in a minestrone soup, the control boiling time would be the boiling time in a recipe that you get on the internet/cookbook (eg: 20 mins).

You could then vary the timing of the boiling from the given recipe (Eg: Variable 1 = 25 mins, Variable 2 = 30 mins).

## 3. PROCEDURE

Procedures are the steps you have to take to complete the experiment. Your procedures must be **detailed** and **specific**, eg. weigh 0.5g of raising agent, prepared 150 mL of water.

Steps to include in your procedure include:

- sample preparation (eg. Chicken breast meat was slice into a dimension of 2cm x 2cm x 2cm).
- steps for cooking of sample (eg: The chicken breast meat was boiled in water for 15 mins)
- steps to collect quantitative results (eg: weight change, height change)
- steps to collect qualitative results (rinse mouth with water, place 10g of carrot in mouth and chew etc)

**NOTE:** When you are planning to conduct your experiment, you should prepare your tables in advance to collect all your quantitative and sensory results.

6087

**Food & Nutrition**

**Dummies for F&N Coursework**

The table for the sensory descriptors for the rating scale should be included here. You should make reference to it in your steps. (Eg: I will rate the samples using the rating scale as shown in Table 1.2.)

Within the steps, you must ensure that these are included:

1. The ingredients and their amounts (eg: 2g of carrots, 1 egg, 20ml oil)
2. The equipment and quantity of the equipment that you are using and how it will be used (eg: beat the eggs using the electric mixer on speed 5 for 5 mins)
3. The factors to ensure that the experiment is carried out quickly and efficiently (eg: cover the pot while the water is boiling in order to allow the water to boil quickly)
4. The factors to consider to ensure the experiment is fair (eg: the brand of the flour should be the same for all 3 cupcakes)
5. Time required or until what change (turn golden brown, rise to 5cm, red colour completely disappears etc) is observed.

**EXAMPLE**

BAD	GOOD
Pour water into the batter and whisk for 3 minutes.	Pour 50 ml of room temperature water all at one go into the batter and whisk with hand held mixer on speed 5 (high speed) for 3 minutes until the mixture just begins to froth.
Collect the results by measuring the foam.	The results of the foam are quantitatively collected by measuring the weight and height with a weighing balance and ruler respectively.
Perform sensory evaluation by tasting chicken breast meat.	To evaluate the chewiness of the chicken breast meat, a piece of chicken meat is tasted. The results is collated into a sensory evaluation table.

#### 4. CONDUCTING THE EXPERIMENT AND COLLECTING YOUR RESULTS

Depending on the complexity of your experiment, the investigative experiment is 1 – 1 ½ hrs long. To increase the reliability of your results from experimental works, you should take photographs **before** and **after** the experiment. This is essential to qualitatively identify the difference before and after cooking the food products of your interest.

**NOTE:** Photos should be high resolution, **clearly labeled** and print on a 4R (4” x 6”). These photographs must be included in your **50-page report**.

### 2.3 INFORMATION SYNTHESIS

After you have collected the results, the third part of Research and Development is to gather information from the results of your experimental work. This set of results is useful as you have to use them for decision making.

Present your results in at least **THREE** different ways. After you present each set of results, you will need to write a brief description of the results, which compare the differences between the 3 variations (control, variable 1 & variable 2). If necessary, explain the cause of the difference identified.

	<b>Quantitative Tests</b> <i>Factors that are measurable in numbers.</i>	<b>Qualitative Tests</b> <i>Factors that are measured with rubrics or scales.</i>
Properties	Weight, size, volume, time and temperature	Appearance, tastes and other sensory characteristics.
Example	Height test, weight tests, Viscosity tests	Photographs, Sensory Evaluation ( <i>Refer to Module 4 Video 3</i> )
Methods of Presentation	Bar Graphs	Likert Scale, Radar Chart

### QUANTITATIVE TESTS

- Height test eg: how leavening agents increase the height of cupcake. Measure the cupcake from base to top of cupcake using ruler.
- Weights test eg: place 50g weights on the cupcake for 5 mins. Measure the height of the cupcake before and after. This will indicate how dense / compact the muffin is.
- Viscosity test eg: measure how far the sauce flows in mm to determine the viscosity / thickness of the liquid.

Example for **HEIGHT TESTS**:

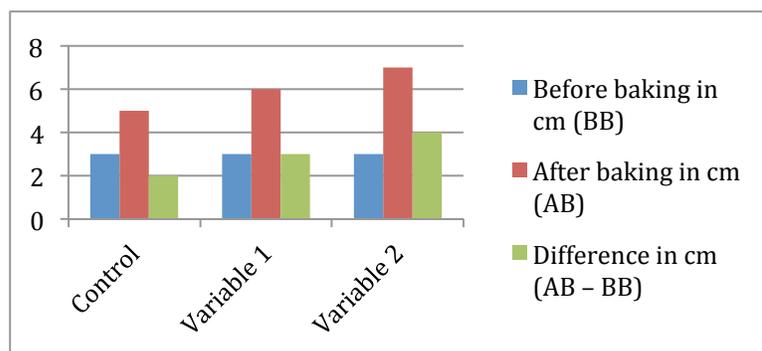
Table 1 :

Change in height of Control (butter) cupcake, Variable 1 (Margarine) cupcake and Variable 2 (Corn oil) cupcake after baking.

Height (cm)	Control (Butter)	Variable 1 (Margarine)	Variable 2 (Corn oil)
Before baking (BB)			
After baking (AB)			
Difference (AB – BB)			

Reporting the results obtained from Table 1 quantitatively with the aid of bar graph:

Figure 1.1 Changes in Heights of Control (Butter), Variable 1(Margarine) and Variable 2 (Corn oil) cupcakes.



Provide a short description of the quantitative results collected, eg: Control had the most change in weight, it changed by 5g etc

An excerpt in describing and evaluating Figure 1.1:

The difference in before and after baking height, the greater the amount of greater air present in the cupcake, hence the less dense the cake. Likewise, the opposite stays the true.

Margarine (control) had the greatest difference in height, hence it was the least dense as it had a difference of 5 cm. Followed by butter (Variable 1) which had a difference of 3 cm. Oil (Variable 2) was the most dense of all 3 samples as it had the least different between the before and after baking height. It had a difference of 1 cm.

## QUALITATIVE TESTS

### Rating Scales

The purpose of the rating reference is to provide other people with a sensory scale to better understand and imagine the results of your samples. Therefore use as many appropriate descriptive words as possible to describe each rating in detail.

Bad Description	Good Description
Very lumpy	Large lumps and grains present
Extremely fluffy	Large air holes and many tunnels present

Example:

	1 Very Bad	2	3	4	5 Very Good
Hardness & Tenderness	Extremely hard and dry	Very soft and light	Crumbly, although a structure is present	Firm and crispy	Tender
Moisture	Extremely low and very dry	Low moisture, dry	Moist and firm	Moist but not gummy	Very moist and sticky.

It is recommended you rate from least to most appealing as this makes it easier to analyse the radar chart.

When writing results for sensory tests, use many **descriptive words** to explain what your senses are detecting about the food and its characteristics.

*You may visit the following site to obtain a list of descriptive words useful in sensory evaluations:*

<http://www.foodaffectoflife.org.uk/attachments/7749a04a-04ca-45266c6a77ba.pdf>

Table 1.2 : Sensory results for Control (butter) cupcake, Variable 1 (Margarine) cupcake and Variable 2 (Corn oil) cupcake

Characteristic	Control (Butter)	Variable 1 (Margarine)	Variable 2 (Corn oil)
Flavour			
Texture (Interior of muffin)			
Moisture			

Reporting the data that you have collated in a radar chart:

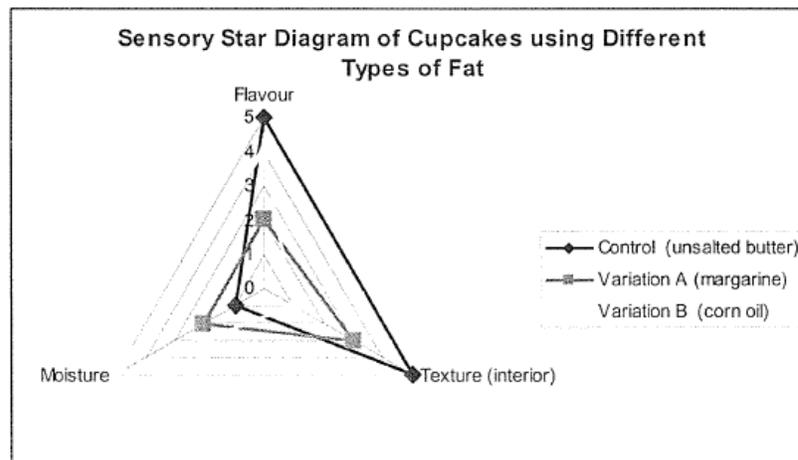


Figure 2.1: Radar Chart that measures the sensory characteristics of Control, Variation A and Variation B.

Different perspective in writing the description of sensory evaluations:

- Description of star diagram - Control
- Area – The graph area of control covers the **most** area.
- Analysis – This indicates that using unsalted butter (control) resulted in the cupcakes overall appeal of all the 3 samples in terms of flavor, texture (interior) and moisture.
- Shape – The graph area of Control is evenly distributed / skewed to the right.
- Analysis – This indicates that using unsalted butter (control) results in the cupcake being the most appealing in Flavour and Texture but least appealing in moisture.
- Use the same method to compare Variation A & B.

Provide **photographs** to support your sensory description.

Remember to provide a short description of the pictorial results, describing only what you see in the diagram.

- When using photographs to compare the differences in characteristics, describe only the differences that can be observed from the photographs eg, colour, size, shininess, smoothness and size. Compare the differences between the 3 variations.

## 5. DISCUSSION

Discussion requires some **brief background information** on the investigative activity. The introduction of your discussion will define the keyword and also any relevant reactions and components.

In the body of your discussion, you will **explain why there are differences in the samples** based on the research that you have previously gathered. It is very important to draw links to your research.

### EXAMPLE

Cooking rice in boiling water for 3 minutes (Control) causes the grains to appear grainy and dry. This suggests that the grains have yet to undergo gelatinisation as three minutes is only sufficient to moist the grain, but not swelling them.

Also, for each attributes (eg. colour, weight, volume etc) that you are examining, write your discussion this way:

- (a) Describe and compare results – Which of the samples lost the most mass in cooking /changed the most in colour/was the most or least dense

### EXAMPLE

Using oil (variable 1) resulted in the densest cake as the height difference in height was the smallest (2cm), followed by margarine used in variable 2 (3 cm) and lastly butter used in control (5 cm).

- (b) Trend – Write a general statement on the trend, then talk about the reaction or components that affected the attribute – eg: was it malliard browning? Caramelisation? Formation of a gluten structure?

### EXAMPLE

The \_\_\_\_\_ in the butter cake, the \_\_\_\_\_ the cake. Air is incorporated during creaming, flour sifting and release of carbon dioxide from flour leavening agents. As air expands and rises in the oven, a stretchy structure allows the cake to rise without collapsing so that the expanding trapped air does not escape from the cake.

**6087**

**Food & Nutrition**

***Dummies for F&N Coursework***

- (c) Explain – Why are there differences in the attribute for the different samples. (eg: the difference in weight is caused by the sample absorbing water due to the reaction of XXX). This explanation comes from your research.

**EXAMPLE**

The amount of air incorporated during creaming could be insignificant compared to the other sources of air during baking. Hence, the extent of gluten formation, not the amount of air incorporated during creaming, appears to be the determining factor of fluffiness in our cake samples.

**6. CONCLUSION**

What have you learnt from your investigative activity? How has it helped you to forward your task? What will you do with the information?

**NOTE:** Remember to link what you have learnt in Investigative Work to the next part of your coursework!

### 3. DECISION MAKING

‘Decision making’ is the segment where you decide on the dishes that are relevant to the topic of interest that you are going to improve and execute in your F&N cookery examination.

In ‘Decision Making’, you have to complete the following tasks:

#### (a) DETERMINE A SET OF CRITERIA WITH WHICH TO SELECT YOUR RECIPES

Based on the information that you have gathered in research, you will come up with some criteria with which to select your recipes. You should keep in mind:

- The criteria should be appropriate for the task (eg. using the key factors)
- There should be a lot of criteria, not just one or two.

#### Example

Criteria	Rationale
Keyword: Appetising	
Dish must have at least 3 contrasting colours	Children find colourful food more interesting, therefore it is important to include more colours to make the dish appealing.

You can present your criteria in various ways. For example, you may wish to put it in the form of a table as shown above, or you can include your criteria in the introductory paragraph of your Decision Making to explain what you are going to look out for when choosing dishes.

#### (b) SELECT THE 3 RECIPES

The recipe should fit most of your criteria, but it does not need to fit all. Within the 3 recipes, you have to demonstrate **3 different cooking methods** from the 4 different categories:

- Hot Fat (Pan fry, Deep fry, Shallow fry, Sauté)
- Moist Heat (Steam, Boil, Simmer, Stew)
- Dry Heat (Bake, Grill, Air fry)
- Others.

Refer to Module 4 Video 1 to obtain the full lists of cooking methods relevant to Food and Nutrition.

Also, within the 3 recipes, you have to demonstrate at least 4 different food preparation skills, not including **cutting**. The following is a non-exhaustive list of food preparation skills.

Rubbing In (eg: short crust pastry like egg tarts, rock cakes, scones, quiche) Creaming (eg: Cupcakes)	Shaping (eg: Croquettes, dumplings, chicken nuggets)	Pastry making (Flaky pastry or choux pastry) This includes all the steps including the rolling and shaping
Dough Making (eg: pizza dough)	Local cakes (eg: Ondeh ondeh, kueh dadah)	Batter making (eg: pancakes, coating batter for sweet & sour fish)
Whisking (eg: Sponge cake, Cheese Soufflé)	Sauce making: Roux (eg: Lasagna, Mac & Cheese, Cauliflower Au Gratin)	Blending Otak (Mackerel Fish Mousse)

### (c) MODIFY THE RECIPE AS NECESSARY

After selecting the recipe, you will need to modify them to suit your criteria that you have listed.

#### EXAMPLE

The choice of recipe was **spaghetti bolognese**.

The improvised dishes should have a variety of colour, ie: have **three contrasting colours**. To meet the criteria, the modified recipe should have an addition of mixed vegetables (corn – yellow, carrots – orange, peas – green).

**NOTE:** You can make modifications to the ingredients, method of preparation and/or cooking method.

### (d) EXPLAIN/JUSTIFY HOW THE DISH MEETS THE CRITERIA YOU HAVE SET OUT.

After modifying your recipe, you should have a paragraph to **explain your reasons** for choosing and modifying dish. You must also state how the dishes meets the criteria and/or is suitable for the task question.

Try to use the keywords/phrases from the task question in your paragraph.

**Ask yourself the following questions:**

- How does the dish help me to achieve the task requirement, question and key words?
- Based on the research, can I explain why this dish is essential to the group of people the task is targeted at?
- What steps have I taken to ensure that the dishes are answering the task question?

**EXAMPLE**

I have chosen the dish Spaghetti Bolognese because this is a very popular dish for children. This is because a tomato and meat based sauce was used in the spaghetti, I can grate different vegetables into the sauce. This will mask the taste of the taste of the vegetables and make it more acceptable to children.

To make it colourful and appetising for them, I will add mixed frozen vegetables that contains yellow corn and green peas. I will also be plating it in the shape of a face to make it interesting for the children.

Remember to include all other factors for consideration when deciding on the dish, eg: budget, availability of ingredients, etc.

**(e) ANALYZE THE RECIPE USING RECIPE ANALYSER (OPTIONAL)**

This may be necessary if you want to quantitatively prove that after modifications your dish has increased or decreased in a particular nutrient. For example, if you are trying to make low fat dishes, you may wish to prove that after modification, the fat in the dish has gone down by  $x$  g.

To analyse the recipe, you have to key in the ingredients of the modified recipes into the recipe analyzer on the Health Promotion Board website to tabulate the nutritive values:

<http://www.hpb.gov.sg/hpb/ere/ere070201.asp?new=yes>

If you need specific nutrients, you may have to search the web for other recipe analyser software, eg: SuperTracker.

**NOTE:** When you cannot find the exact ingredients, use the closest ones possible.

This will allow you to include the data from the modified recipe in your coursework to prove your dish has certain nutrients, meets RDA, guidelines and nutritious.

#### 4. PLANNING AND EXECUTION

Congratulations! You are halfway through. It gets much easier from here.

To complete the Planning section of your coursework, there are five tasks that needs to be completed:

- (a) **Copy and paste the recipes (ingredients and procedures) into this section of the coursework.**
- (b) **Complete an Overall Time Plan.**

Overall Time Plan is different from Overall Work Plan (in Task Analysis). Overall Time Plan is a plan of what you will do during your practical session. You have to execute your three dishes within two hours. The easier the dishes you have chosen, the shorter your time plan should be.

Please note that you should:

- Be detailed, logical and methodological in listing all steps for the three recipes.
- Think it through when drafting an Overall Time Plan, and not just blindly copying and pasting the methods in the recipe. In other words, they must be executable and realistic.
- Plan in time slots of 5, 10 or 15 minutes
- Show **dove-tailing**, or the overlapping of tasks. If your dish requires you to bake a cake mixture for 15 minutes, you are expected to fill yourself with some tasks in the waiting time.
- There must be a total of three wash-ups. There should be two wash-ups in between the practical and one final wash up at the end after you have garnished the dish.
- Your Overall Time Plan should list down the garnishing and plating steps of the dishes.

For example, place one cupcake on a white plate that has a dolly. Top the cupcake with a swirl of whipcream and sprinkle half a teaspoon of rainbow sprinkles over the cupcake.

6087

## Food & Nutrition

### Dummies for F&N Coursework

- You must be careful of the 'Time In' and 'Time Out'. This should be done for food that is cooked using moist heat and dry heat cooking. These type of dishes have longer waiting time.

Eg: When you write a step about putting a cake into the oven (time in), you must include the step where it comes out of the oven (time out).

- When you write about equipment, you must state how that particular equipment is used.

Eg: Half-fill a medium sized pot with water, and place it on the medium heating element on high heat. OR Place the cake in the middle shelf of the preheated oven.

- List the ingredients and the amounts that are being prepared at each step.

Eg: Mince 2 cloves of garlic finely. Slice the medium potato, 1 carrot and 2 small onions into fine slices.

- You should also state at what point the step is complete.

Eg: Fry the potato cutlet on one side for 2 minutes until it is golden brown before turning it over.

### (c) List out all the Ingredients & Equipment

In this section, you will need to list out all the ingredients (and their quantities) and the equipment use in the execution of the three recipes.

#### NOTE:

- Ingredients that are the same from different recipes should be added together.
- Use the metric system in cooking. (Eg: Use 'ml' instead of 'fl oz'). You can find conversion tables online.
- Dry stores are ingredients that you keep in the pantry, but are NOT sauces. (Sauces are included in the 'Condiments' section) eg: rice, flour, ginger, garlic
- Any ingredients used for garnishing should also be included in this list.
- Try to minimise the amount of equipment you use.
- Include plates, utensils, racks, gloves and oven timers.

6087

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**Dummies for F&N Coursework**

Table 4.1: Examples on List of Ingredients used for Execution

<b>Ingredients</b>	<b>Quantity</b>
<b>Meat/Poultry/Seafood:</b>	
Fish fillet	2 pieces
<b>Fruit/Vegetables:</b>	
Pumpkin	150grams
Black Fungus (jew's ear) (wet)	100grams
Lettuce	12 slices
Shallot	5
Garlic	2
Fresh ginger	1
Ginger	1 inch

Table 4.2: Examples on List of Equipment used for Execution

<b>Equipment</b>	<b>Quantity</b>
Knife	1
Saucepan	1
Boiling Pot	2
Plates	3
Soup Bowl	4
Spatula	1
Fork	1
Table spoon	1

## 5. EVALUATION

To complete the Evaluation section of your coursework you have to do the following:

### (a) Evaluate the cooking process for each dish

You will need to evaluate the strengths and weaknesses (or areas of improvement) of the cooking process of each dish. As you comment on your weaknesses, you may wish to talk about what you could have done to have avoided or alleviated the problem. You can use the table below to help you think of areas that you can comment on, however do not limit yourself to this table.

	Were you / Did you / Did your...?
Organisation	Systematic and on task Confident in what you were doing Had all the required equipment and ingredients on hand Had a clean and tidy table through the practical
Management	Made good use of time Did not waste water or gas Did not waste ingredients or food
Manipulation	Use different food preparation and cooking methods Used the right utensils and kitchen tools Was confident in operating kitchen equipment Was hygienic and safe

Below is an example of an evaluation of the cooking process of a dish.

### EXAMPLE

For the Sponge & Raisin Cake, I had all the ingredients such as the flour, butter and sugar, neatly placed on the table on a tray so could see exactly where everything was. This enabled me to save time and complete the practical within 2 ½ hours. However, While I was cooking, some of the plastic bags which I had kept the raisins and flour in were left flying around on the table. As I had practiced using the cake mixer at home before coming to school, I was able to easily assemble and operate the school's cake mixer. As I had the correct tools on hand, such as the cake spatula, I was able to scrape all the batter from the cake bowl into the cake tin. This ensured that I did not waste any cake mixture. Also, because I had a very well thought through time plan, I had remembered to preheat the oven at the correct timing and hence by the time I was ready to place the cake in the oven, it was at the correct temperature of 180°C.

6087

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**(b) Evaluate the sensory characteristics of each dish**

In this section, you will comment on the strengths and weaknesses of the sensory characteristics (Flavour, Appearance, Texture etc) of each dish. You can also include any comments that your friends and relatives have made on the dishes.

**NOTE:**

- Do not be afraid of including negative comments if there are any. It is hard to produce perfect dishes. At the same time, do not feel obligated to include negative comments
- Include photographs of your dishes in this segment of the coursework.

**EXAMPLE**

Raisin sponge cake



The sponge cake had a very delicate and fragrant smell. It was also soft and not too sweet which would make it appropriate for an elderly person since they cannot chew well and should not have excess carbohydrates in their diet. I also thought that the icing sugar garnish was very cute and would attract the elderly person to eat the cake.

My friend's comments:

My friend similarly thought that the sponge cake was soft and had just the right level of sugar. However she felt that I should have used more colours on the plate as there was only brown and white. She commented that I should have used some fresh fruit to garnish and make the cake look more appetizing.

**(c) Evaluate each dish based on suitability to the coursework**

Next, you will have to evaluate the dish based on the topic of your coursework. You can write it in terms of suitability to each keyword, or you can write it as an evaluation of each dish's suitability to the task.

**EXAMPLE**

Keyword: Dishes suitable for an elderly person

All the dishes I prepared were of a soft texture, which made them suitable for an elderly person as the elderly do not have very strong teeth. Hence, the soft food would have been easy to chew. Also, as the elderly have lower energy requirements, all the dishes were also suitable as they were low in fat and sugar. For example, the amount of butter in the cake had been reduced by 20g.

**(d) Overall Evaluation - Evaluate ALL aspects of the work done from Task Analysis to Planning**

Here you will review all the work you have done from the Task Analysis to the Planning section. You should ask yourself and answer the following questions:

- What did I have to do for this section of the coursework?
- What were my strengths or what did I find easy to do?
- What were my weaknesses or what did I find difficult to do?
- Was I able to overcome the difficulties I faced?
- If I could do the section again, what would I have done differently?
- What was I supposed to accomplish for the section?
- How well was I able to accomplish what I was supposed to for the section?

**EXAMPLE**

Firstly I had to highlight the keywords from the task question. I then had to find out the definition of each keyword and state how it is related to the whole task. Subsequently I had to think of related questions to each keyword to do research on. Finally I had to write a time plan from start to finish of the entire coursework. My strengths were that I was able to easily identify the keywords within the task question. I was also able to think up of relevant questions for each keyword in order to assist in my research. However, it did take me quite some time to come up with these questions which meant that I had less time to come up with the overall time plan for the whole task. In future I will start the brainstorming for questions earlier and give myself more time to complete the section as it is quite difficult.

6087

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***Dummies for F&N Coursework***

**FINAL THINGS TO NOTE ABOUT COURSEWORK:**

- Bibliography goes right at the end (that is, after the evaluation) and not part of the 50 pages.
- Total length of coursework should not exceed 50 pages.

**THE END**

**CREDITS**

1. This set of notes includes materials from the [Food and Nutrition Website for Pierce Secondary School](#) with modifications done by the author.
2. Samples of an F&N Coursework can be found in SgForums written by the forum user *MyPillowTalk*.