PASSING LANE

SIS - Sport, Fitness and Recreation Training Package

SIS20219 Certificate II
Sport - Developing Athlete

SIS30419 Certificate III
Sport - Athlete

Unit

SISSPAR003

Follow specialist dietary advice

Trainer/Teacher Manual

Passing Lane Pty Ltd
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SAMPLE ONLY

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STUDENT/TRAINEE DETAILS

Student/Trainee Name

Student/Trainee Email

Teacher / Trainer Name

School / Institution / Training Organisation / Employer

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INTRODUCTION

This manual is developed to provide training content that addresses the specific 'Unit of Competency' as outlined on the following pages.

It provides the teacher and/or trainer with a document that includes all that the student and/or trainee manual content plus guidance notes as well as answers to the learning activities in the student/trainee manual.

This manual can be packaged with various manuals addressing other 'Units of Competency' in order to meet the 'Packaging Rules' of a particular Australian Training Package Qualification.

This resource has been designed to be delivered in a form that is conducive to the learning environment including:

- ☆ Online delivery
- ☆ Classroom delivery
- ☆ On the job training

The documents are designed in a 'landscape' format in order to make reading on a computer screen easier as well as reduces the need to scroll down pages. Documents can be easily printed if the learning environment requires the student or trainee to have hard copies of the learning materials.

INTRODUCTION—CONT'D

LEARNING ACTIVITIES

The learning activities in the student and/or trainee manuals are 'Form Enabled' so that if the resources delivered online, the activities can be filled in using the computer keyboard.

Each learning activity is identified with the following icon.

Learning activities come in the following forms.

- ☆ Questions
- ☆ Research
- ☆ Tasks
- ☆ Interviews

Questions

Questions would relate to the information presented on previous pages.

Research

This type of learning activity would require the student or trainee to locate information by using research methods. The information they would be require to locate would be in line and/or support the information that the manual had outlined in previous pages.

INTRODUCTION—CONT'D

Tasks

This learning activity type would require the student/trainee to actually do or undertake something and would be reinforcing the knowledge they have gained from reading the manual's previous pages.

Interviews

This learning activity type would require the student/trainee to interview person(s) in an actual workplace environment or a person(s) who are experienced in the industry sector which the student/trainee is currently undergoing training.

The student/trainee is made aware of the type of learning activity by noting the learning activity type displayed under the learning activity icon.

SELF ASSESSMENT

At the end of each manual is a series of questions that the student/trainee should review and answer.

This self assessment is to ensure in the student's or trainee's mind that they have reviewed and understood the information that was presented in their manual.

If they are unsure of their understanding in any of the topics reviewed, they are encouraged to go back and review the information again and/or seek the assistance of their teacher or trainer.

UNIT OF COMPETENCY OVERVIEW

The following pages are extracts from Training.gov.au website and outlines this specific 'Unit of Competency' including the 'Elements' and the 'Performance Criteria'. The content within this manual has been developed to address this unit.

SISSPAR003 - FOLLOW SPECIALIST DIETARY ADVICE

ELEMENT	PERFORMANCE CRITERIA
1. Seek and follow specialist dietary advice	1.1. Discuss individual goals, expectations, preferences, physical activity and eating patterns with dieticians 1.2. Consult with dieticians to obtain specialist advice on healthy eating patterns required to meet individual goals 1.3. Consult with dieticians to obtain specialist advice on nutritional strategies and recipes to meet individual goals 1.4. Read and interpret dietary advice provided by dieticians 1.5. Follow specialist advice provided by dieticians in day to day activities
2. Prepare food	2.1. Prepare, handle and store food products to meet food safe conditions 2.2. Select and measure ingredient quantities to meet recipe specifications 2.3. Use food preparation methods, equipment and tools to prepare meals and snacks 2.4. Clean food preparation areas, equipment and tools to meet food safe conditions

Section One

Seek and Follow Specialist Dietary Advice

FOLLOW SPECIALIST DIETARY ADVICE

SECTION ONE—SEEK AND FOLLOW SPECIALIST DIETARY ADVICE

Introduction

To perform at his or her best, an athlete starts with a healthy diet.

Getting the proper nutrition is essential for their bodies to operate at peak capacity. The for them is to eat a well-balanced diet consisting of carbohydrates, protein and healthy fats.

In this unit we look at how an athlete should seek and follow dietary advice specifically developed for athletes.

Section Learning Objectives

At the completion of this section you will learn information relating to:

- ☆ Discussing individual goals, expectations, preferences, physical activity and eating patterns with dieticians
- ☆ Consulting with dieticians to obtain specialist advice on healthy eating patterns required to meet individual goals
- ☆ Consulting with dieticians to obtain specialist advice on nutritional strategies and recipes to meet individual goals
- ☆ Reading and interpreting dietary advice provided by dieticians
- ☆ Following specialist advice provided by dieticians in day to day activities

Discuss individual goals, expectations, preferences, physical activity and eating patterns with dieticians

AND

Consult with dieticians to obtain specialist advice on healthy eating patterns required to meet individual goals

(Over the next few pages we cover two 'Performance Criteria' points at the same time to avoid repetition)

A professional sports dietician understands that when advising on dietary requirements for an athlete they need to take into account the physiological characteristics of the athlete. They would review and discuss the physiological characteristics of the athlete that generally includes:

- ☆ fat to muscle ratio (body composition)
- ☆ metabolic rate
- ☆ gender

Measuring ***'fat to muscle ratio'*** is known as the 'body composition'. Body composition refers to the portion of your body that is fat versus muscle, bone and other fat-free tissue (also known as FFM). This should not be confused with BMI, or Body Mass Index. Knowing your body fat percentage can be more useful in determining your health and fitness level than simply BMI.

For many athletes they strive for a lean physique and better athletic performance, by not only losing excess fat, but also working on toning muscles. Your ideal body composition will depend on the sport you're training for and your gender. Studies have shown that a high protein/reduced carbohydrate diet was more effective in improving body composition when combined with exercise.

Metabolic rate is the term used to describe how our body transforms energy to be able to run all its functions to keep us alive.

Our metabolic rate is the rate at which our body burns calories. When an athlete consumes carbohydrates, protein and fat the body converts this into energy. Food energy is measured in 'kilojoules' or commonly known as 'calories'. This is the unit of measurement that suggests how much energy a food contains and how much energy is burned up during exercise.

Finally, a main physiological characteristic is ***gender,*** or whether the athlete is a male, or a female. Male athletes have a higher ratio of muscle mass to body weight, which allows for greater speed and acceleration. However, female athletes are more efficient than male athletes at converting certain foods to energy. This is why female athletes excel in ultra-long-distance sports, such as marathons.

When exercising, muscle tissue burns a high level of kilojoules. The more muscle mass you have, the more kilojoules you will burn. So this often means that men generally have higher energy requirements than women, because they have more muscle tissue.

Addressing Nutritional and Physiological Requirements

Every sport has its own physiological demands and those athletes training in those sports would need a diet designed to meet their nutritional requirements according to the sport's physiological demands.

Aside from an athletes' daily nutritional requirements and food intake, there are the sports training nutritional requirements.

This means that those designing an eating plan for an athlete's nutritional requirements would need to choose not only the proper foods, but also meals that contains those foods as ingredients.

There are numerous meal recipes available that are designed for athletes in a wide range of sports and exercising intensities.

One good source is the Australian Sports Commission website. This website can be accessed at www.ausport.gov.au. The recipes are listed and these can be located by doing a website search for 'Recipes'.

Once a recipe has been selected it may need to be modified. The reasons a recipe may need to be modified can vary, but some reasons could include:

- ☆ ***Age of the athlete*** - some recipes may need to be adjusted to cater for a younger person's tastes
- ☆ ***Likes and dislikes of an athlete*** - some athletes are fussy about what they eat
- ☆ ***Ingredients availability*** - there may be some seasonal and availability issues with some ingredients
- ☆ ***Allergies*** - some athletes may have allergies to some foods or ingredients
- ☆ ***Cultural food restrictions*** - there are many types of foods, especially meats that are restricted by certain cultures, as well as favoured by certain cultures

Modifying a recipe may simply mean replacing an ingredient with another. For example, instead of pork, you may want to use chicken. If the recipe is spicy, you may need to lower the amount of chilli in the recipe. The wraps in a recipe may need to be 'gluten free'. These are some simple examples on how a recipe may need to be slightly modified.

Eating Timeframes

There are three distinct timeframes in sports training when food is consumed.

- ☆ Pre-training
- ☆ During training
- ☆ Post training

The eating plan and the food that is part of that eating plan would need to address each timeframe as the athlete's nutritional requirements are different for each. The types of food chosen would also be dependant on the type of sport the athlete is training for.

The pre-training meals are generally consumed 2-4 hours prior to training and 1 hour or so before training a snack is often recommended. A pre-training meal 2-4 hours prior to training should be high in carbohydrate food and drink, particularly if the training is long and/or hard. A pre-training meal high in fat or protein is likely to increase the risk of digestive discomfort. That is why it is recommended that meals just before an event should be high in carbohydrates, low GI and known not to cause gastrointestinal upset.

The GI refers to the time it takes the body to breakdown and absorb the food. For a pre-training meal you want low GI foods that would take time to breakdown and be absorbed, meaning the athlete would have the carbohydrates available during the training.

It takes 90 -180 minutes of continuous exercise at a slow to fast pace to use up the body's carbohydrate 'stores'. Muscle carbohydrate can also be used up after only 15-30 minutes in a high intensity sporting event, or in training.

Post training meals are also known as 'recovery' meals. Firstly, the athlete would need to replace fluids and rehydrate. This would include drinking water and/or specially formulated sports drinks to replace salts and minerals lost during the exercise.

The nutritional requirements of the post training meal will vary according to the 'nutritional stress' caused by the event. It takes up to 24 hours to replace an athlete's carbohydrate stores. Carbohydrate foods and fluids should be consumed after training, particularly in the first one to two hours after training. To top up glycogen stores after exercise, the athlete should eat carbohydrates with a moderate to high GI in the first half hour or so after training. High GI foods would be broken down quicker, absorbed by the bloodstream and sent to the muscles for the recovery process.

In some sports, athletes will be exposed to prolonged and high-intensity exercise that causes a substantial breakdown of muscle protein. In these cases the post event meals should include a reasonable amount of protein.

Learning Activity

Task

LEARNING ACTIVITY ONE

Below are statements that are either true, or false. Tell us which ones are true and for those that are false, tell us why they are false.

Measuring *'fat to muscle ratio'* is known as the 'Body Mass Index'.

True or False _____

If false, why?

Studies have shown that if you do not exercise high protein/reduced carbohydrates are more effective in improving body composition.

True or False _____

If false, why?

The more muscle mass you have, means you are stronger and this means you will burn less kilojoules.

True or False _____

If false, why?

Our metabolic rate is the rate at which our heart beats when we are running.

True or False _____

If false, why?

TEACHER / TRAINER GUIDANCE NOTES

False—Measuring ***'fat to muscle ratio'*** is known as the 'body composition'.
False—Studies have shown that a high protein/reduced carbohydrates diet was more effective in improving body composition when combined with exercise.
False—The more muscle mass you have, the more kilojoules you will burn.
False—Our metabolic rate is the rate at which our body burns calories.

CONSULT WITH DIETICIANS TO OBTAIN SPECIALIST ADVICE ON NUTRITIONAL STRATEGIES AND RECIPES TO MEET INDIVIDUAL GOALS

The term ‘strategy’ can be defined as:

“A plan of action designed to achieve a long-term or overall aim”

So when we say that an athlete's diet must be based on some ‘dietary strategies’, this means that it needs to be well planned and designed using the most appropriate information to achieve the athlete's dietary requirements over the long term.

As we now know, the athlete's chosen sport has a significant influence on what their diet plan will be.

Generally you can divide a sporting activity into four categories:

1) A team sport
2) An endurance sport
3) A sprint type sport
4) An aquatic sport

Each category has a varying level of physical exercise involved and these levels can change depending on the sport within each category.

For any athlete to succeed in a sport they need commitment and training to build their sporting skills. As important is the need to address the nutritional needs of the athlete, especially when training. This is when sport dieticians should be consulted

Dietary Strategies

A sports dietician will rely on those few common athletic dietary strategies mentioned earlier when advising an athlete.

Let's look at each of those previously mentioned dietary strategies:

Low fat versus low kilojoule diets - The term 'kilojoules' is also known as 'calories'. There is always a debate on having a low kilojoule diet (low carbohydrate intake) for losing weight. Too much carbohydrate can result in weight or fat gain, but too little carbohydrate will result in fatigue and ultimately athletic performance can be dramatically affected.

Athlete's should avoid high fat foods such as biscuits, cakes, pastries, chips and fried foods. Certain fats are important and these can be sourced from nuts, seeds, olive oil and avocados.

Reducing body fat not muscle - Nutritionally speaking, an athlete losing fat without losing muscle is all about a diet that includes adequate protein. Depending on the sport, protein can play an important role in the muscle repair and recovery process after exercise. Below is a table showing how much protein is recommended for various types of sports. The table is how many grams of protein per day intake based on a per kilo of body weight.

Elite male endurance athletes	**1.6 grams/day/kilo**
Moderate-intensity endurance athletes	**1.2 grams/day/kilo**
Recreational endurance athletes	**0.8-1.0 grams/day/kilo**
Football, power sports	**1.4-1.7 grams/day/kilo**
Resistance athletes (early training)	**1.5-1.7 grams/day/kilo**
Resistance athletes (steady state)	**1.0-1.2 grams/day/kilo**
Female athletes	**~15% lower than male athletes**

(An extract from the AIS website)

Carbohydrate loading - Athletes in endurance sports often use diets based on 'carbohydrate loading'. Sports such as cycling, marathon running, longer distance triathlon, cross-country skiing and endurance swimming benefit from carbohydrate loading.

The concept of carbohydrate loading is a strategy involving a diet that can maximise the body's carbohydrate stores prior to an endurance competition. There are numerous strategies related to carbohydrate loading. A common one starts two days before an event where the athlete does minimal training to allow the muscles to build up plenty of carbohydrate stores. Carbohydrate loading generally has the athlete consuming approximately 10 grams of carbs per kg of body weight daily in the two days leading up to the event.

Regularity of meals - An athlete's diet generally focuses on three main areas...1) pre-event meals 2) food intake during an event and 3) post event or recovery meals. Generally, athletes like to have those designing their diet meals to be 'inventive with their meals. To keep any athlete motivated to stick with a healthy diet it is suggested that the person designing the diet experiment with new recipes and ingredients, as well as focus on making simple food swaps to make meals healthier than the traditional recipes.

Dietary supplements - There is a tremendous debate going on about whether food supplements are either good or even needed in an athlete's diet. The main problem with sports food supplements is the unsubstantiated claims by the manufacturers of the product. They claim significant increase in an athlete's performance as a result of their product, without any real evidence other than an athlete's endorsement.

However, there are supplements that are useful and these are recommended at times by sports dieticians.

These include:

- ☆ ***Sports drinks*** - used to rehydrate and replace salts and minerals lost through sweating
- ☆ ***Sports gels*** - used to boost carbohydrates in the body during an event
- ☆ ***Sports bars*** - there are two types. One is used to boost carbohydrates and the other is used to boost protein intake.
- ☆ ***Liquid meal supplements*** - some quality liquid meal supplements are recommended to boost carbohydrates or protein intake before or after an event without ingesting solid foods.
- ☆ ***Multivitamin/mineral supplements*** - Other supplements include vitamin, and mineral supplements such as iron, calcium and so on. These should only be taken under the advice of a qualified dietician and/or a medical professional.

Hydration - There can be a significant amount of body fluid loss during training exercises and most sports events. The body needs fluids to regulate heat resulting in increased body temperature and an elevated heart rate. This body fluid needs to be replaced regularly and this is called re-hydration. Water and quality sports drinks should be consumed to re-hydrate the athlete's body.

An athlete who starts to become dehydrated will begin to feel fatigued and their performance starts to drop dramatically. Every athlete and coach should make fluid replacement a key priority during training and competition.

Nutritional Strategies

The term ‘nutrition’ is the science associated with simply keeping your body ‘fed’. It involves the types of food eaten, when the food is eaten and how the body absorbs the ‘nutrients’ out of the food eaten.

The three main nutrients from food that supply the body with energy are ***carbohydrates***, ***fat*** and ***protein***.

In sport’s training the main fuel used by an athlete is ***carbohydrates***. Nutrient-rich carbohydrate foods include foods such as cereals, breads, pasta, rice, fruits, vegetables and legumes. Foods that contain refined sugars such as sports drinks, soft drinks and lollies are also a source of carbohydrate and used in high intensity type sports, but should not be used instead of those nutrient-rich carbohydrate foods.

For body recovery and building of muscle, foods that are high in ***protein*** are required. It is also a source of energy when the body has started to deplete its reserve of carbohydrates. High-quality protein foods include chicken, turkey, beef, lamb, pork, fish, eggs, dairy foods, nuts and seeds. There are some high protein supplements on the market, however they are expensive and the protein needs of most athletes can be met by a well-balanced diet that include high-quality protein foods.

For long duration, low to moderate intensity training exercise ***fat*** is the main fuel source. For high intensity exercise, where carbohydrate is the main fuel source, fat is needed to help access the stored carbohydrate. ‘Healthy’ fats are in foods such as nuts, seeds, fish, reduced-fat dairy foods, lean meat and avocados.

Identifying the Nutritional Requirements

On the previous pages we mentioned the recommended protein intake for athletes based on the type of sports.

In some sports, athletes will be exposed to prolonged and high-intensity exercise that causes a substantial breakdown of muscle protein. In these cases the post training meals should include a reasonable amount of protein. Protein needs are generally met by following a high-carbohydrate diet, because many foods, especially cereal-based foods, are a combination of carbohydrate and protein. However, meals could also include protein rich ingredients such as:

- ☆ Lean meats including chicken
- ☆ Canned or cooked fish
- ☆ Baked beans, lentils
- ☆ Eggs
- ☆ Tofu

More importantly the diet needs to address the carbohydrate needs. Recommended carbohydrate requirements vary depending on the duration, frequency and intensity of training.

Athletes are advised by their sports dieticians to adjust the amount of carbohydrate they consume for fuelling and recovery to suit their exercise level. For example:

Light intensity exercise (30 mins/day)	**3–5 g/kg/day**
Moderate intensity exercise (60 mins/day)	**5–7 g/kg/day**
Endurance exercise (1–3 hrs/day)	**6–10 g/kg/day**
Extreme endurance exercise (more than 4 hrs/day)	**8–12 g/kg/day**

(An extract from the Better Health.vic.agov.au website)

Foods chosen for the athletes diet should be rich in unrefined carbohydrates. These could include a reasonable amount of wholegrain breads and cereals. Refined carbohydrate foods such as white bread, lollies, soft drinks are useful to boost carbohydrate intake, but should not be the main component of the diet.

Learning Activity

Question

LEARNING ACTIVITY TWO

1) Generally you can divide a sporting activity into four categories. What were those four categories?

1 _____

2 _____

3 _____

4 _____

2) There are three main nutrients from food that supply the body with energy. What are they?

1 _____

2 _____

3 _____

TEACHER / TRAINER GUIDANCE NOTES

1)

1. A team sport
2. An endurance sport
3. A sprint type sport
4. An aquatic sport

2) The three main nutrients from food that supply the body with energy are ***carbohydrates***, ***fat*** and ***protein***.

Learning Activity

Question

LEARNING ACTIVITY THREE

What were the six dietary strategies we mentioned in this Section?

TEACHER / TRAINER GUIDANCE NOTES

1) Low fat versus low kilojoule diets
2) Reducing body fat not muscle
3) Carbohydrate loading
4) Regularity of meals
5) Dietary supplements
6) Hydration

Learning Activity

Question

LEARNING ACTIVITY FOUR

What were the four areas that dietary strategies should be assisting with?

TEACHER / TRAINER GUIDANCE NOTES

- ☆ Increasing the athlete's performance
- ☆ Increasing the athlete's energy
- ☆ Increasing the athlete's concentration
- ☆ Increasing the athlete's reaction times

Learning Activity

Question

LEARNING ACTIVITY FIVE

What is another common term for ‘kilojoules’?

TEACHER / TRAINER GUIDANCE NOTES

Calories.

Learning Activity

Task

LEARNING ACTIVITY SIX

In this Section we had a table that showed the average 'protein intake' that is recommended for male athletes. We have shown some of the information below in that table.

Tell us what was the amount required for each.

Football, power sports _____ **grams/day/kilo**

Elite male endurance athletes _____ **grams/day/kilo**

Moderate-intensity endurance athletes _____ **grams/day/kilo**

TEACHER / TRAINER GUIDANCE NOTES

Football, power sports	**1.4-1.7 grams/day/kilo**
Elite male endurance athletes	**1.6 grams/day/kilo**
Moderate-intensity endurance athletes	**1.2 grams/day/kilo**

Learning Activity

Question

LEARNING ACTIVITY SEVEN

In the previous activity you told us the average 'protein intake' that is recommended for male athletes. What would be the 'female athletes' recommended protein intake?

TEACHER / TRAINER GUIDANCE NOTES

15% less than a male athlete.

Learning Activity

Question

LEARNING ACTIVITY EIGHT

1) What is 'carbohydrate loading' and what is a common method used by athlete's when loading up on carbohydrates?

2) What types of sports would use the 'carbohydrate loading' concept?

TEACHER / TRAINER GUIDANCE NOTES

1) The concept of carbohydrate loading is a strategy involving a diet that can maximise the body's carbohydrate stores prior to an endurance competition. There are numerous strategies related to carbohydrate loading. A common one starts two days before an event where the athlete does minimal training to allow the muscles to build up plenty of carbohydrate stores.
2) Athletes in endurance sports often use diets based on 'carbohydrate loading'.

Learning Activity

Question

LEARNING ACTIVITY NINE

What were the five common dietary supplements we reviewed in this Section?

TEACHER / TRAINER GUIDANCE NOTES

1) ***Sports drinks***
2) ***Sports gels***
3) ***Sports bars***
4) ***Liquid meal supplements***
5) ***Multivitamin/mineral supplements***

READ AND INTERPRET DIETARY ADVICE PROVIDED BY DIETICIANS
AND
FOLLOW SPECIALIST ADVICE PROVIDED BY DIETICIANS IN DAY TO DAY ACTIVITIES

(Over the next few pages we cover two 'Performance Criteria' points at the same time to avoid repetition)

It is important to know that many persons in sports as support staff often will offer and provide dietary advice to athletes.

The basics of dietary advice from a non–accredited dietician is often and should be restricted to:

- ☆ Food groups, types and amounts of foods to be included in a healthy diet
- ☆ Educating the athlete about how to read food labels for nutrition information
- ☆ Limit intake of foods containing saturated fat, added salt, added sugar and alcohol
- ☆ Caring for food; prepare and store it safely
- ☆ Assist the athlete in reading and interpreting specialised dietary advice from a qualified dietician

A specialised sports dietician is able to provide qualified advice and recommendations that include:

- ☆ Detailed nutritional assessment to determine individual energy, macro- and micronutrient needs and/or adequacy
- ☆ Provision of personalised meal plans detailing nutritional composition to meet a specific goal
- ☆ Nutrition advice for specific requirements
- ☆ Prescribing nutritional supplements (performance, medical or general health)
- ☆ Providing nutrition advice related to medications or drug interactions
- ☆ Providing medical nutritional therapy for a specific condition or injury

There are potentially serious consequences for seeking dietary advice from unqualified persons.

These include the following risks for athletes:

- ☆ Nutrient deficiencies and imbalances
- ☆ Negative impact on existing health conditions
- ☆ Food intolerance or allergy adverse reactions
- ☆ Negative food-drug interactions
- ☆ Nutrition confusion

Locating Specialist Dietary Advice

In Australia there is a group called ‘Sports Dietician Australia’.

They have an extensive library of fact sheets, including some focused on specific sports.

Their website is at:

https://www.sportsdietitians.com.au

They also provide a listing of accredited sports dieticians that you can contact directly and seek personalised assistance when designing an athlete's diet plan.

Learning Activity

Task

LEARNING ACTIVITY TEN

To successfully complete this 'Unit of Competency' you are required to be in contact and seek advice from an accredited sports dietician.

Your teacher or trainer may have suitable dieticians in which they could recommended or you may need to locate one yourself and have this accredited sports dietician approved by your teacher or trainer.

Once you have had located an accredited sports dietician for the assessment tasks, you then are required to seek advice of nutritional needs, requirements and meal planning based on the sport you are participating in, as well as what level you are currently at..

The teacher or trainer would provide you with the necessary forms and documents for the sports dietician to fill in and sign off on.

TEACHER/TRAINER GUIDANCE NOTES

The assessment requirements for this unit of competency states:

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- ☆ follow specialist dietary advice that involves:
  - ♦ seeking and following specialist dietary advice from one Accredited Practising Dietician

Section Two

Prepare Food

FOLLOW SPECIALIST DIETARY ADVICE

SECTION TWO—PREPARE FOOD

Introduction

This section goes through some basic tasks for preparing, handling and storing products with details on preparation using a recipe as an example.

Section Learning Objectives

At the completion of this section you will learn information relating to:

- ☆ Preparing, handling and storing food products to meet food safe conditions
- ☆ Selecting and measuring ingredient quantities to meet recipe specifications
- ☆ Using food preparation methods, equipment and tools to prepare meals and snacks
- ☆ Cleaning food preparation areas, equipment and tools to meet food safe conditions

Prepare, handle and store food products to meet food safe conditions
and
Select and measure ingredient quantities to meet recipe specifications
and
Use food preparation methods, equipment and tools to prepare meals and snacks

(Over the next few pages we cover three 'Performance Criteria' points at the same time to avoid repetition)

Cooking meals for athletes always suggests that the food ingredients need to be healthy, fresh and chosen to meet the nutritional requirements of the athlete.

This is true, however just as important is the way you cook the meal.

Many times this is dictated by the recipe, so you would want to chose recipes that are cooked in a way to maintain the nutritional value of the food.

Healthy cooking methods include:

- ☆ Using recipes that include plenty of raw fruit and/or vegetables
- ☆ Grilling, broiling or roasting, instead of frying
- ☆ Steaming
- ☆ Poaching
- ☆ Stir frying using stocks instead of oils
- ☆ Sautéing using minimal oil

Safe Food Handling Procedures

When preparing meals it is essential that you follow safe food handling procedures. The first important procedure is personal hygiene. Always wear clean clothes, avoid wearing jewellery, keep your hair tied up, wear hairnets and always keep your hands clean.

Wash your hands with soap after you go to the toilet. Keep your nails short and clean. After handling raw meat or fish and before handling other types of food you must wash your hands to avoid 'cross contamination'.

Always use a different knife when cutting raw meat or fish and other types of foods and never use the same cutting board for raw meat or fish and then for fruit and/or vegetables.

Store meat, poultry and fish in separate sealed storage containers so no cross contamination is possible. This includes both raw and cooked meat, poultry and fish.

Storage Temperatures

The temperature in the storeroom or cabinets is dependent on the type of food being stored. As a guide the following temperatures are recommended:

☆ Dry Goods	12 – 15 degrees centigrade
☆ Cool rooms or refrigerators for meat/fish/poultry	1 – 3 degrees centigrade
☆ Cool rooms or refrigerators for dairy/fruit/vegetables	4 – 6 degrees centigrade
☆ Freezers	Minus 18 degrees centigrade

It is important that the temperatures are controlled and monitored. Any variation in temperatures, especially in the freezer and refrigeration areas could cause food spoilage.

Follow Instructions in the Recipe

Many athletes would have prepared a meal, however some may not have prepared a meal using a recipe.

There are two parts to a recipe.

The first part are the ingredients. The ingredients are listed out by the name of the ingredient and the amount required.

For example, below is a recipe taken from the AusSport website and its ingredients:

Chicken and Sweetcorn Soup

Ingredients

- ☆ Spray canola, or olive oil
- ☆ 300 g chicken tenderloins
- ☆ 5 spring onions, thinly sliced
- ☆ 2 teaspoons minced ginger
- ☆ pinch cayenne pepper
- ☆ 1½ litres (6 cups) MAGGI Chicken Stock
- ☆ 400 g can creamed corn
- ☆ 2 tablespoons chopped fresh parsley

The first step is to ensure you have all the ingredients available first and the proper amount. You see in the above example there are measurements. You would need to be familiar with those measurements and have the proper measuring tools.

Also, in the above example it includes spring onions that are ‘thinly sliced’, parsley ‘chopped’ and ginger ‘minced’ as ingredients. This means that ingredients that need to be chopped, diced, minced or sliced, need to be prepared before they are used in the recipe.

The next part is the ‘Method’.

This part refers to the instructions about how to prepare, cook and serve the meal.

The first step is to read through this section to look for what cooking tools you will need. As an example, we have added the recipe from the previous page, but showing the ‘Method’.

Chicken and Sweetcorn Soup

Method

1) Spray a non-stick frying pan with oil and heat.
2) Cook the chicken for 5 minutes, turning occasionally, or until lightly browned and cooked through.
3) Cool, cut into fine slices and set aside. Heat another spray of oil in a large saucepan.
4) Add the spring onions and cook over medium heat for 2 minutes, or until soft.
5) Add the ginger and cayenne pepper and cook, stirring for another 1 minute.
6) Add the stock, corn and cooked chicken to the pan.
7) Bring to the boil, reduce the heat and simmer for 5 minutes.
8) Stir in the parsley just before serving.

You see here you need a non-stick frying pan and a large saucepan. You also see that there is some slicing involved so you would need some knives. To stir you would need some larger spoons. Finally, you will need some type of timer, as some of the ingredients need to cook for a specific period of time.

So now you have the ingredients ready and the cooking equipment on hand.

You can now start preparing and cooking the meal. It is important to follow the steps as they are listed out in the recipe. For example in the recipe above, the chicken needs to be fried, cooled and then sliced before you go on to the next steps of the recipe.

Learning Activity

Task

LEARNING ACTIVITY ONE

Below are some terms used to describe a type of cooking. Do some research and in your own words, under each one tell us what each term means.

Poaching

Roasting

Broiling

Sautéing

TEACHER / TRAINER GUIDANCE NOTES

Poaching—this is a method of cooking using a boiling liquid, such as water or stock to cook the food.
Roasting—this this is a method of cooking using a hot oven and the food is cooked by the hot air surrounding the food.
Broiling—similar to grilling except the heat comes from a radiant element generally above the food. This means that the food often needs to be turned to complete the cooking process.
Sautéing—this method is to cook food quickly in a minimal amount of oil over relatively high heat in a pan. The food is tossed several times during the cooking process.

Learning Activity

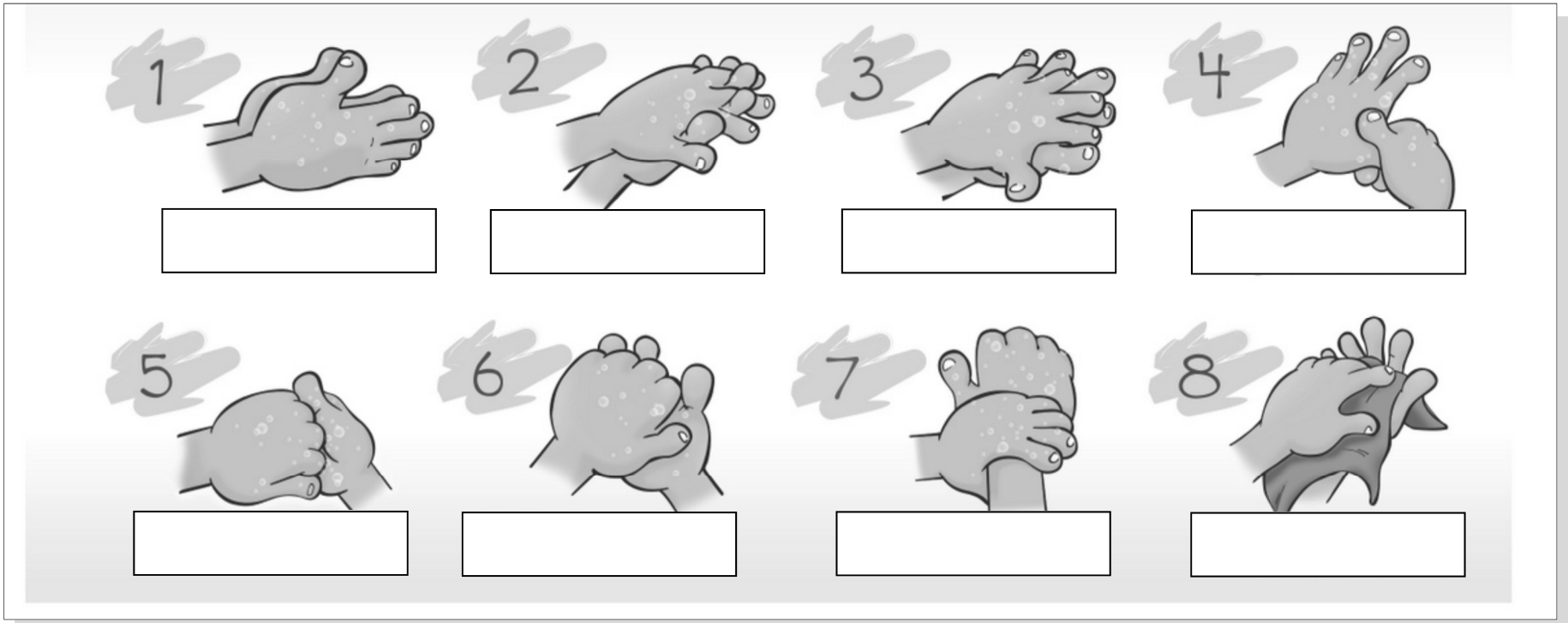
Research

LEARNING ACTIVITY TWO

In the kitchen, food safety must be followed at all times or foodbourne illness will occur. One of the most important food safety issues are in regard to the cook's hands.

Food cross-contamination, human illnesses and bacteria is often transferred to raw and cooked food from the cook's hands if they are not kept extremely clean.

In this activity we want you to do some research and locate some information on the 'Eight Common Steps' for washing hands before cooking. Below is a graphic of those steps. Name each step in the area provided.



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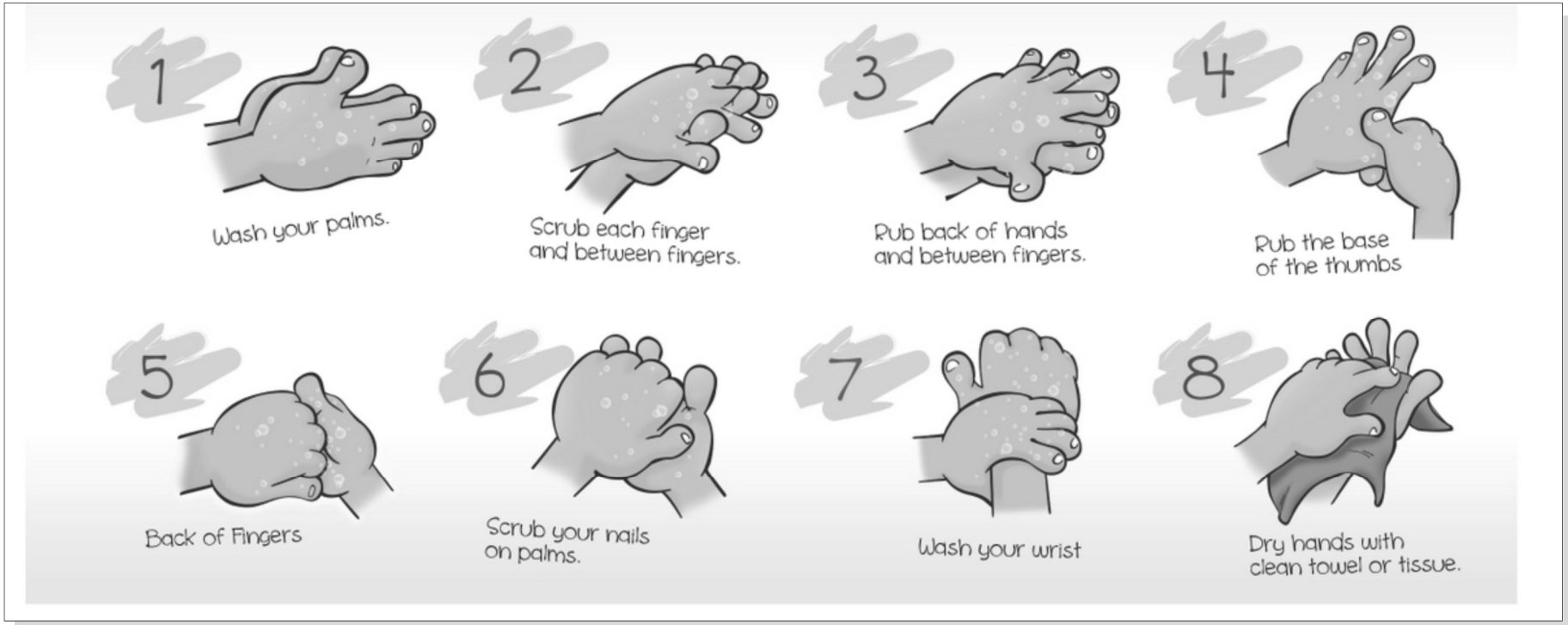


Learning Activity

Question

LEARNING ACTIVITY THREE

Although not mentioned in detail in this Section, tell us why some types of jewellery are not recommended to be worn when cooking food.

TEACHER / TRAINER GUIDANCE NOTES

There are two main reasons.

First some jewellery may break or lose parts and drop into the food and secondly, jewellery on the hand such as rings, tend to store bacteria underneath them and this could contaminate food.

Learning Activity

Question

LEARNING ACTIVITY FOUR

The temperature in the storeroom or cabinets is dependent on the type of food being stored. Tell us what temperatures are recommended for the following types of foods:

Dry Goods _____

Cool rooms or refrigerators for meat/fish/poultry _____

Cool rooms or refrigerators for dairy/fruit/vegetables _____

Freezers _____

TEACHER / TRAINER GUIDANCE NOTES

The temperature in the storeroom or cabinets is dependent on the type of food being stored. As a guide the following temperatures are recommended:

- ☆ Dry Goods — 12 – 15 degrees centigrade
- ☆ Cool rooms or refrigerators for meat/fish/poultry — 1 – 3 degrees centigrade
- ☆ Cool rooms or refrigerators for dairy/fruit/vegetables — 4 – 6 degrees centigrade
- ☆ Freezers — Minus 18 degrees centigrade

Learning Activity

Task

LEARNING ACTIVITY FIVE

Below is an activity you are to do at home. We have extracted a recipe from the AusSport website and have displayed it below. In this activity you need to go through the ingredients and the method of cooking and on the next page list them out. Next to each one indicate the ingredients that you would have already at home, or those that you would be required to buy. We have shown an example.

Mild Beef Curry

- ☆ Spray canola or olive oil
- ☆ 750 g lean diced beef
- ☆ 1 large onion, chopped
- ☆ 2 teaspoons minced garlic
- ☆ 2 teaspoons minced ginger
- ☆ 1 tablespoon curry powder
- ☆ 500 mL (2 cups) MAGGI Beef Stock
- ☆ 1 red capsicum, chopped
- ☆ 2 carrots, sliced
- ☆ 500 g potatoes, cut into 3cm pieces

Spray a large pan with oil and heat. Cook the meat over medium heat in 2 batches for 2-3 minutes or until well browned. Set aside. Spray a little more oil into the pan, add the onion and cook for 3 minutes or until soft. Add the garlic, ginger and curry powder and stir-fry for about 30 seconds. Gradually add the stock, stirring to scrape the spices from the bottom of the pan. Return the meat to the pan. Bring to the boil, reduce the heat to low and cook, covered, for 30 minutes. Add the vegetables to the pan and cook for a further 30 minutes or until the meat is tender. Uncover the pan for the last 15 minutes of cooking, and stir regularly, so the gravy thickens. Serve with long-grain or basmati rice.

Ingredients

1 large onion—HOME (or BUY)

TEACHER / TRAINER GUIDANCE NOTES

This activity is designed to get a student or trainee used to going through a recipe in detail. This is one is a bit tricky, because in the methods section there is rice listed as an ingredient that is not in the ingredients list.

Learning Activity

Task

LEARNING ACTIVITY SIX

Again, using the recipe in Activity Five, we want you to list all the cooking tools and utensils you think you would need in order to prepare this recipe. List them below.

Cooking Tools/Utensils

TEACHER / TRAINER GUIDANCE NOTES

The list should include:

- ☆ Knives and cutting board
- ☆ Mincer
- ☆ Large pan
- ☆ Dish to set aside cooked meat
- ☆ Rice cooker or saucepan to cook rice

Learning Activity

Task

LEARNING ACTIVITY SEVEN

Using again the recipe in Activity FIVE, tell us how long you think it would take to prepare and cook this recipe.

TEACHER / TRAINER GUIDANCE NOTES

This is a bit of a tricky question.

The cooking time is clearly outlined in the recipe, except there is two batches of meat to be cooked, totalling 6 minutes. Total cooking time would be approximately 75 minutes. What is not shown is the time it takes to prepare the ingredients and this the student or trainee would need to estimate.

Clean food preparation areas, equipment and tools to meet food safe conditions

After preparing and cooking food, the food preparation surfaces, tools and equipment need to be cleaned.

Detergent removes dirt and grease, but only a sanitiser kills germs. Most food preparation areas require a good wash down with detergent and then a sanitising step.

There are many sanitising solutions on the market, however the most commonly used sanitiser is a mixture of 1 part bleach with 9 parts water. Concentrations higher than necessary can create a safety hazard; cause taste and odour problems, corrode metals and other materials and leave residues.

Chlorine sanitising solutions should be at a minimum temperature of 25°C. They are less effective at lower temperatures. At temperatures higher than 45°C chlorine may evaporate from the solution and corrode certain metals. In general all sanitisers work best at temperatures between 25°C and 45°C. It is important to follow the contact time guidelines to allow enough time to kill the germs. The average is 2 minutes.

For kitchen benches, equipment surfaces and items such as cutting boards and waste bins there is a recommended 'Four Step Process'.

Step 1 – Preparation

- ☆ Remove loose dirt and food particles
- ☆ Rinse with warm, potable water

Step 2 – Cleaning

- ☆ Wash with hot water (60 °C) and detergent
- ☆ Rinse with clean potable water

Step 3 – Sanitising (bacteria killing stage)

- ☆ Treat with very hot, clean, potable water (75 °C) for at least 2 minutes
- ☆ Apply sanitiser as directed on the label

Step 4 – Air drying

- ☆ Leave to air dry

Cleaning Kitchen Equipment

There are a number of types of kitchen equipment that an athlete could use to prepare meals. The more common ones would include:

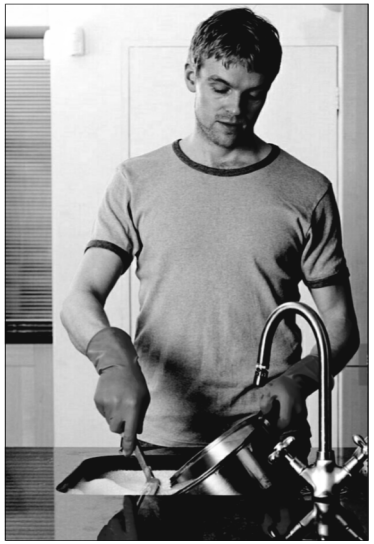
- ☆ Blenders
- ☆ Microwave ovens
- ☆ Cooktops
- ☆ Ovens

Equipment such as blenders can usually be dismantled and the parts placed into a dishwasher or washed by hand in hot water and dish washing soap in a sink.

Inside a microwave can be cleaned using soapy water and then rinsed with hot clean water. With both the blenders and the microwave oven, the manufacturer's instruction manual should be reviewed if you are not sure on how to clean the equipment.

Cooktops will often have spills or splatters from the cooking process. After the grates or electric elements have cooled down, the cooktop grates can be removed and washed in the sink and the rest of the cooktop washed down with soapy water and rinsed with hot water.

Ovens are generally cleaned periodically using oven cleaners. It is important to follow the oven cleaner instructions when using the product and especially important is to wear protective clothing such as gloves, safety glasses, long sleeves and wear a face mask to avoid the caustic fumes.



Cleaning Crockery, Glassware, Utensils and Tools

The most common method of cleaning crockery, glassware, utensils and cooking tools is using the dishwasher. Dishwashers use a strong caustic cleaner and hot water for rinsing so they are cleaned and sanitised .

In the absence of a dishwasher, crockery, glassware, utensils and tools can be washed and rinsed in a sink.

Here are some tips on washing crockery, glassware, utensils and tools by hand.

- ☆ ***Rinse dishes and stack in piles*** - Use a long handle scrub brush and clean large food particles off of dishes.
- ☆ ***Fill sink with hot soapy water***
- ☆ ***Place all the silverware in the soapy water to one side*** - Place a couple of plates in the water. Then lay in as many glasses as you can get in on top of that. Do this so the plates and silverware can soak while you are washing the glasses.
- ☆ ***Wash the things that touch your mouth and those that are the least soiled first*** - Start with glasses, silverware, plates, bowls, serving dishes, then pots and pans.
- ☆ ***Keep placing more dirty dishes in the sink to soak*** - Do this as you have room. If the water starts getting to dirty then change it.
- ☆ ***Rinse each piece with running hot water*** - Turn the water on and off as you rinse each piece, so that you use very little water. Do not fill one sink with water to rinse dishes because the water after rinsing a few items, the rinse water has soap in it and is 're-contaminating' (each subsequent piece. There is a reason why surgeons wash their hands in running water and the same principle applies to dishes.
- ☆ **Let dishes, glassware and so on air dry** - This prevents germs contaminating the clean dishes from dirty tea towels

Cutting boards that have been used to cut meat, poultry or fish, need extra scrubbing. It is recommended that boiling water is used to rinse these cutting boards.

Learning Activity

Task

LEARNING ACTIVITY EIGHT

To successfully complete this 'Unit of Competency' you are required to be observed preparing meals and snacks suitable for an athlete that follows dietary advice over a three day period.

In the first part of this activity you are to provide your teacher or trainer, recipes that you intend on preparing over this three day period. It needs to be a mix of meals and snacks.

Once you have had approval to prepare those meals, then you are to have someone with athletic dietary experience observe you preparing those meals and snacks.

It is important that you discuss with your teacher or trainer, who would be suitable as an observer. They would need to be approved by the teacher or trainer. The teacher or trainer would provide you with the necessary forms and documents for those observing to fill in and sign off on.

TEACHER/TRAINER GUIDANCE NOTES

The assessment requirements for this unit of competency states:

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- ☆ follow specialist dietary advice that involves:
  - ♦ preparing own meals and snacks to meet specialist dietary advice over a period of three days.

SELF ASSESSMENT

Self assessment is where you ask yourself certain questions to ensure you have understood what you have learned while reading this manual and completing the learning activities.

This unit requires you the student or trainee at the completion of your training to have a certain level of 'Required Knowledge' in which you would need to have acquired and in which you will be assessed on. This self assessment section reviews this required knowledge by way of questions and if you are able to say YES to all of them you can be confident your assessment will be satisfactory.

- ☆ This training unit had two sections about receiving and following dietary advice. After reviewing the information in Section One, are you confident that you understand and could:
    1) Discuss individual goals, expectations, preferences, physical activity and eating patterns with dieticians
    2) Consult with dieticians to obtain specialist advice on healthy eating patterns required to meet individual goals
    3) Consult with dieticians to obtain specialist advice on nutritional strategies and recipes to meet individual goals
    4) Read and interpret dietary advice provided by dieticians
    5) Follow specialist advice provided by dieticians in day to day activities
- ☆ After reviewing the information in Section Two, are you confident that you understand and could:
    1) Prepare, handle and store food products to meet food safe conditions
    2) Select and measure ingredient quantities to meet recipe specifications
    3) Use food preparation methods, equipment and tools to prepare meals and snacks
    4) Clean food preparation areas, equipment and tools to meet food safe conditions

If there were any questions that you were unable to confidently say YES to, we encourage you to review the information again in this manual and if needed seek the assistance of your teacher or trainer.

NOTES