

Level 3 Personal Trainer - Applying the Principles of Nutrition To A Physical Activity Programme

Full Name (Capitals)	
Course Start Date	
Course Location	
Tutor Name	

Statement of Achievement

Assessor, by signing this statement of unit achievement you are confirming that all learning outcomes, criteria and range statements have been achieved under specified conditions and that the evidence gathered is authentic.

This statement of unit achievement table must be completed prior to claiming certification.

Section	Pass/Refer	Assessor Full Name	Assessor Signature
Understand the principles of nutrition and key guidelines to nutrition			
Understand nationally recognised practices to providing nutritional advice			
Understand the relationship between nutrition and physical activity			
Understand how to collect nutrition information and how to use it			
Understand the principles of nutritional goal setting, how to collect and analyse			
Be able to apply the principles of nutrition to a physical activity programme			

Learner Name		IQA Name	
Learned Signature		IQA Signature	
Date		Date	

L/600/9054 Applying the Principles of Nutrition to a Physical Activity Programme

The workbook

Purpose

The purpose of this workbook is to support you, the learner, as you gather and record evidence.

Content

The workbook covers all of the criteria required to achieve this unit. You may choose to complete some or all of the tasks listed. If you choose not to complete this workbook, or only complete some of the tasks, other supporting evidence **must** be submitted to your assessor to show that all the assessment criteria in this unit have been fully achieved.

Assessor

Your assessor will also support you to complete the workbook. He or she will discuss the workbook with you and answer any questions you may have on what you need to do. The assessor will make sure that you fully understand what you will need to learn in order to record your answers in your workbook.

For this unit especially, each learning outcome - or just some of the learning outcomes - could be covered by having a discussion with your assessor. That discussion could be voice recorded, or your assessor could write a report on the discussion. This is a useful alternative to writing all your answers.

If you and your assessor decide to do this, you can prepare for any discussions by using the boxes to write bullet point notes as a reminder.

What you need to do:

1. You may want to add additional pages as required or use the blank pages at the back of the workbook for any notes or to complete questions where you run out of space. Please ensure that you have signed and dated every attachment before submission.
2. When you are ready to submit your work, please complete the unit sign off form on **page 44** with the details required.

You are now ready to start completing your workbook.

Good Luck!

Title:	L/600/9054 Applying the principles of nutrition to a physical activity programme
Level:	3
Credit Value:	6
GLH:	40
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand the principles of nutrition	1.1 Describe the structure and function of the digestive system 1.2 Explain the meaning of key nutritional terms including: • diet • healthy eating • nutrition • balanced diet 1.3 Describe the function and metabolism of: • macro nutrients • micro nutrients 1.4 Explain the main food groups and the nutrients they contribute to the diet 1.5 Identify the calorific value of nutrients 1.6 Explain the common terminology used in nutrition including: • UK dietary reference values (DRV) • recommended daily allowance (RDA) • recommended daily intake (RDI) • glycaemic index 1.7 Interpret food labelling information 1.8 Explain the significance of healthy food preparation 1.9 Explain the relationship between nutrition, physical activity, body composition and health including: • links to disease / disease risk factors • cholesterol • types of fat in the diet

2. Understand key guidelines in relation to nutrition	2.1 Identify the range of professionals and professional bodies involved in the area of nutrition 2.2 Explain key healthy eating advice that underpins a healthy diet 2.3 Describe the nutritional principles and key features of the National food model/guide 2.4 Define portion sizes in the context of the National food model/guide 2.5 Explain how to access reliable sources of nutritional information 2.6 Distinguish between evidence-based knowledge versus the unsubstantiated marketing claims of suppliers
3. Understand nationally recommended practice in relation to providing nutritional advice	3.1 Explain professional role boundaries with regard to offering nutritional advice to clients 3.2 Explain the importance of communicating health risks associated with weight loss fads and popular diets to clients 3.3 Evaluate the potential health and performance implications of severe energy restriction, weight loss and weight gain 3.4 Identify clients at risk of nutritional deficiencies 3.5 Explain how cultural and religious dietary practices can influence nutritional advice 3.6 Describe safety, effectiveness and contraindications relating to protein and vitamin supplementation 3.7 Explain why detailed or complex dietary analysis that incorporates major dietary change should always be referred to a Registered Dietician

4. Understand the relationship between nutrition and physical activity	4.1 Define the role of carbohydrate, fat and protein as fuels for aerobic and anaerobic energy production 4.2 Explain the components of energy expenditure and the energy balance equation 4.3 Explain how to calculate an estimate of Basal Metabolic Rate (BMR) 4.4 Explain how to estimate energy requirements based on physical activity levels and other relevant factors 4.5 Identify energy expenditure for different physical activities 4.6 Evaluate the nutritional requirements and hydration needs of clients engaged in physical activity
5. Understand how to collect information relating to nutrition	5.1 Explain why it is important to obtain clients' informed consent before collecting nutritional information 5.2 Describe the information that needs to be collected to offer nutritional advice to clients 5.3 Explain the legal and ethical implications of collecting nutritional information 5.4 Describe different formats for recording nutritional information 5.5 Explain why confidentiality is important when collecting nutritional information 5.6 Describe issues that may be sensitive when collecting nutritional information 5.7 Explain different methods that can be used to measure body composition and health risk in relation to weight
6. Understand how to use nutritional information	6.1 Describe basic dietary assessment methods 6.2 Explain how to analyse and interpret collected information so that clients' needs and nutritional goals can be identified with reference to the National food model/guide recommendations 6.3 Describe how to interpret information gained from methods used to assess body composition and health risk in relation to weight

	6.4 Explain how to sensitively divulge collected information and 'results' to clients 6.5 Explain how to recognise the signs and symptoms of disordered eating and healthy eating patterns 6.6 Describe the key features of the industry guidance note on 'Managing users with suspected eating disorders' 6.7 Explain the circumstances in which a client should be recommended to visit their GP about the possibility of referral to a Registered Dietician
7. Understand the principles of nutritional goal setting with clients	7.1 Explain how to apply the principles of goal setting when offering nutritional advice 7.2 Explain how to translate nutritional goals into basic healthy eating advice that reflects current National guidelines 7.3 Explain when people other than the client should be involved in nutritional goal setting 7.4 Define which other people could be involved in nutritional goal setting 7.5 Identify the barriers which may prevent clients achieving their nutritional goals 7.6 Explain how to apply basic motivational strategies to encourage healthy eating and prevent non-compliance or relapse 7.7 Explain the need for reappraisal of clients' body composition and other relevant health parameters at agreed stages of the programme
8. Be able to collect and analyse nutritional information	8.1 Collect information needed to provide clients with appropriate healthy eating advice 8.2 Record information about clients and their nutritional goals in an approved format 8.3 Analyse collected information including nutritional needs and preferences in

	relation to the clients current status and nutritional goals
9. Be able to apply the principles of nutrition to a physical activity programme	9.1 Access and make use of credible sources of educational information and advice in establishing nutritional goals with clients 9.2 Design and agree nutritional goals that are compatible with the analysis, accepted good practice and national guidelines 9.3 Ensure that the nutritional goals support and integrate with other programme components 9.4 Agree review points with the clients 9.5 Review the clients understanding of how to follow the nutritional advice as part of their physical activity programme 9.6 Monitor, evaluate and review the clients' progress towards their nutritional goals
Additional information about this unit N/A	
Unit aim (s)	This unit covers the learner's ability to apply the principles of nutrition to support client goals as part of an exercise and physical activity programme.
Assessment requirements specified by a sector or regulatory body (if appropriate)	Refer to Level 3 Personal Training Assessment Strategy developed by SkillsActive
Details of the relationship of the unit and relevant national occupational standards	Instructing Physical Activity and Exercise 2009 NOS D462 Apply the principles of nutrition to support client goals as part of an exercise and physical activity programme

1. This question is in two parts

a) Describe the structure of the different components of the digestive system.

(AC1.1)

Component	Description of structure
Mouth	
Oesophagus	
Stomach	
Small intestine	
Large intestine (colon)	
Rectum	
Liver	
Pancreas	

b) Describe the functions of the different components of the digestive system.

(AC1.1)

Component	Description of function
Mouth	
Oesophagus	
Stomach	
Small intestine	
Large intestine (colon)	
Rectum	
Liver	
Pancreas	

2. Explain the given terms.

(AC1.2)

Term	Definition
Diet	
Healthy eating	
Nutrition	
Balanced diet	

3. This question is in two parts.

a) Describe the functions of macronutrients and micronutrients.

Macronutrients	Main functions
Proteins	
Fats	
Carbohydrates	
Micronutrients	Main functions
Vitamin, mineral and antioxidants	

b) Describe the metabolism of macronutrients and micronutrients.

(AC1.3)

Macronutrients	Metabolism
Proteins	
Fats	
Carbohydrates	
Micronutrients	Metabolism
Vitamin, mineral and antioxidants	

4. Give the calorific value (per g) of the given dietary components.

(AC1.5)

Dietary component	Kcal/g
Fats	
Proteins	
Carbohydrates	
Alcohol	

5. Explain the given terms.

(AC1.6)

Term	Explanation
UK dietary reference values (DRV)	
Recommended daily allowance (RDA)	
Recommended daily intake (RDI)	
Glycaemic Index	

6. In what order are ingredients listed on a food label?

(AC1.7)

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7. What four pieces of information are always listed on a nutrition label?

(AC1.7)

1.	
2.	
3.	
4.	

8. For the nutrition label shown, calculate the percentages of kcal supplied by protein, carbohydrate and fat.

Learner guidance: first calculate how many calories are in each macronutrient and then divide your answer by the total energy

Typical values	Per 100g
Energy	197kcal
Protein	11.7g
Carbohydrates	20.9g
Fat	7.0g

(AC1.7)

Nutrient	Percentage kcal
Protein	
Carbohydrate	
Fat	

9. What do the given food labelling terms mean?

(AC1.7)

Term	Meaning
"Fat free"	
"Low fat"	
"Lite"/"Light"	

10. This question is in two parts.

a) Give an example of a healthy alternative method of preparing/cooking food.

b) How can the example of healthy food preparation you gave for question 10a contribute to a healthy diet?

(AC1.8)

11. Explain the relationship between blood cholesterol levels and disease.

(AC1.9)

12. Complete the following table to show the effect of different types of fat on blood cholesterol levels.

(AC1.9)

Type of fat	Effect of high-density lipoproteins (HDL)	Effect on low density lipoproteins
Saturated		
Monounsaturated		
Polyunsaturated		
Trans fatty acids		

13. Explain the relationship between physical inactivity, body composition (obesity) and disease.

(AC1.9)

14. Identify three professional job roles, and three professional bodies involved in the area of nutrition.

(AC2.1)

Professional roles	
1.	
2.	
3.	

Professional bodies	
1.	
2.	
3.	

15. The Department of Health/NHS recommend the 'eight tips for healthy eating'.

Complete the table to explain how each tip supports a healthy diet.

(AC2.2)

Eight tips for healthy eating	How this supports a healthy diet
Base your meals on starchy food	
Eat lots of fruit and veg	
Eat more fish	
Cut down on saturated fat and sugar	
Eat less salt	
Get active and be a healthy weight	
Don't get thirsty	
Don't skip breakfast	

16. The National Food Guide is based around the 'eatwell plate'/'food pyramid'.

Complete the table below to identify a range of recommended portion numbers (for individuals requiring a 1600kcal - 3000kcal diet) for each given food group, and the main nutrients each food group contributes to the diet.

(AC2.3)

Food group	Recommended portion numbers	Main nutrients in food group that contribute to a healthy diet
Bread, cereal, rice and pasta		
Vegetables		
Fruits		
Meat, poultry, fish, beans, eggs and nuts		
Dairy (milk, yoghurt and cheese)		
Fats, oils and sweet foods		

17. Give an example of a portion size for each given food group.

(AC2.4)

Food group	Example portion size
Fruit	
Vegetables	
Bread, cereal, rice, pasta, and other starchy foods	
Dairy (milk, yoghurt, cheese)	
Meat, poultry, fish, beans, eggs and nuts	
Fats, oils and sweet foods	

18. Explain how to access reliable sources of nutritional information.

(AC2.5)

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19. How can you tell whether a nutritional claim from a supplier is based on evidence, or is an unsupported claim from that organisation?

(AC2.6)

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20. Explain what nutritional advice is acceptable to offer in your role as an exercise instructor.

Give two examples.

(AC3.1)

1.	
2.	

21. Under what circumstances would it be necessary to refer a client to a dietitian?

(AC3.1)

22. Why is it important to explain health risks associated with weight loss fads and popular diets to clients?

(AC3.2)

23. Give two examples of the health and performance implications of severe:

- Energy restriction
- Weight loss
- Weight gain

(AC3.3)

Examples of the health and performance implications of severe energy restriction	
1.	
2.	

Examples of the health and performance implications of severe weight loss	
1.	
2.	

Examples of the health and performance implications of severe weight gain	
1.	
2.	

24. Identify four types of clients who would be at increased risk of nutritional deficiencies.

(AC3.4)

1.	
2.	
3.	
4.	

25. Explain how culture and religion can influence nutritional advice.

(AC3.5)

26. Describe the potential benefits, contradictions, and safety of protein supplementation.

(AC3.6)

Potential benefits of protein supplementation

Potential contraindications and safety of protein supplementation

27. Describe the potential benefits, contradictions, and safety of vitamin and mineral supplementation.

(AC3.6)

Potential benefits of vitamin and mineral supplementation.

Potential contraindications and safety of vitamin and mineral supplementation.

28. Why should detailed or complex dietary analysis that incorporates major dietary change always be referred to a registered dietitian?

(AC3.7)

29. Define the roles of carbohydrate, fat and protein for aerobic and anaerobic energy production.

(AC4.1)

Type of energy production	Roles of carbohydrate, fat and protein
Aerobic	
Anaerobic	

30. Explain the energy balance equations.

(AC4.2)

	Explanation of energy balance equation
For a client to maintain body weight	
For a client to increase body weight	
For a client to decrease body weight	

31. What are the three main components of energy expenditure?

(AC4.2)

1.	
2.	
3.	

32. This question is in three parts.

- a) Calculate an estimate of the basal metabolic rate (BMR) for a 75kg male individual aged 35 years old. Show your workings.

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- b) Based on your answer to the previous question, calculate the daily energy expenditure for this individual if they are:

Learner guidance: use physical activity multipliers

Activity level	Daily energy expenditure
Sedentary	
Moderately active	
Very active	

c) Apart from physical activity, what other factors can affect daily energy expenditure?

Learner guidance: consider 'individuality'

(AC4.3. 4.4)

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33. Identify the typical energy expenditures for the following physical activities:

Learner guidance: please show your calculations

(AC4.5)

Activity	Kcal/hour/kg. body weight
Walking at 3.5 mph	
Jogging at 6mph	
Bicycling at 10mph	
House cleaning	
Swimming, slow crawl	

34. Evaluate how the following nutritional requirements will change if a sedentary client starts to engage in regular physical activity in terms of:

(AC4.6)

Total energy	
Protein	
Carbohydrate	
Fat	
Hydration	

35. Why is it important to obtain a client's informed consent before collecting nutritional information?

(AC5.1)

36. Give five examples of information that need to be collected in order to offer nutritional advice to clients.

(AC5.2)

1.	
2.	
3.	
4.	
5.	

37. Explain the legal and ethical implications of collecting nutritional information.

(AC5.3)

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38. Why is confidentiality important when collecting nutritional information?

(AC5.5)

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39. Give two examples of sensitive information you might collect when asking about a client's nutrition.

(AC5.6)

1.	
2.	

40. Listed in the table below are three methods of measuring body composition.

Explain how each is used to measure health risk in relation to weight.

(AC5.7, 6.1)

Method	How it is used to measure health risk
Body Mass Index (BMI)	
Waist circumference (WC)	
Waist-to-hip ratio	
Skin folds and skin fold indices	
Bioelectrical impedance	

41. Describe the following basic dietary assessment methods:

(AC5.4, 6.1)

Verbal questioning by instructor	
24 hours food recall diary	
Weighted food diary	

42. Explain how you can use the following methods to analyse and interpret collected nutrition information so that a client's needs can be identified.

(AC6.2)

Method	How this can be used to analyse and interpret information and identify needs
Counting servings/portions of the different food groups eaten	
Adding up grams of fats/carbohydrates/proteins eaten	

43. Explain how you would discuss sensitive information with clients.

(AC6.4)

44. Explain how to recognise signs and symptoms of:

- Disordered eating
- Healthy eating patterns

(AC6.5)

Disordered eating

Healthy eating patterns

45. Describe the key features of the industry guidance note on, “Managing Users with Suspected Eating Disorders”.

(AC6.6)

46. Give three examples of circumstances in which a client should be referred to their GP about seeking further dietary advice.

(AC6.7)

1.	
2.	
3.	

47. Explain what is meant by the acronym SMART when applied to goal setting.

(AC7.1)

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48. What basic healthy eating advice, reflecting current national guidelines, could you offer a client to help them achieve the following SMART goals?

(AC7.2)

Goal	Healthy eating advice, reflecting current national guidelines
Reduce blood pressure to a healthy range within six months	
Lose 1 stone/7kg fat in three months	
Reduce blood cholesterol level to a healthy range within six months	

49. Give two examples of other people who could be involved in the client's nutritional goal setting, and explain when it would be appropriate for these people to be involved.

(AC7.3, 7.4)

Person	When appropriate to be involved

50. Identify three common barriers that may prevent clients achieving their nutritional goals.

(AC7.5)

1.	
2.	
3.	

51. Give three examples of basic motivational strategies to encourage healthy eating and prevent non-compliance or relapse.

(AC7.6)

1.	
2.	
3.	

52. Give two reasons why it is important to reappraise a client's health parameters at agreed stages of a programme.

These could include body composition, blood pressure, waist measurement, cholesterol or BMI.

(AC7.7)

1.	
2.	

Assessor/IV Feedback

Question	Feedback and further actions

Unit sign off	
L/600/9054 Applying the principles of nutrition to a physical activity programme	
Learner name:	
Learner registration number:	
Centre name/number:	
Assessor/tutor name:	
Your job role (if applicable):	
Main organisation (this will either be the organisation the learner is employed by or, if the Learner is not currently employed, an organisation they are familiar with):	
I confirm that the answers given in this workbook are my own work	
Learner Signature:	Date:
I confirm that the answers given in this workbook have been assessed against the assessment criteria for this unit and have been judged for validity, authenticity, currency, reliability and sufficiency.	
Assessor Name:	
Assessor Signature:	Date:
IQA Name & Signature: (if applicable)	Date:

Learner Notes

Question	Notes