

Level 1/Level 2 Cambridge National in Sport Science

R181 Applying the principles of training: fitness and how it affects skill performance

Set Assignment

Give to candidates on or after 1 June 2024.

Valid for assessment in the January and June 2025 assessment series only.



INSTRUCTIONS TO TEACHERS

- Read the information for teachers before delivering this set assignment.

INFORMATION

- The total mark is **80**.
- This document has **20** pages.

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Information for teachers

You **must**:

- use this set assignment for summative assessment of students.
- familiarise yourself with the Assessment Guidance relating to the tasks. This is with the unit content in Section 4 of the [Specification](#).
- read and understand **all** the rules and guidance in Section 6 of the [Specification](#) **before** your students complete and you assess the set assignments.
- make sure that completion of the set assignments and assessment fully adheres to the rules and guidance in Section 6 of the [Specification](#).
- give students the [Sport Science student guide to NEA assignments](#) before they start the assignments.
- allow students around 16 guided learning hours (GLH) to complete all tasks.
- complete the [Teacher Observation Record](#) on page 17 for Tasks 1 and 2. You must follow the [guidance](#) on page 18 when completing it. A Word version of this document is available to download from the Teach Cambridge website.

You **must not**:

- change or modify this assignment.
- use or modify this assignment for practice, even when the assignment is no longer valid for assessment. Sample assessment material is provided for this purpose.

You **can**:

- give your students a Word version of the risk assessment template provided for Task 4. This can be downloaded from the Teach Cambridge website.

Scenario for the assignment

Applying the principles of training: fitness and how it affects skill performance

The person profile in the scenario will change in each assignment. Tasks relating directly to the person will also change.

Fitness and how it affects skill performance

You have joined a local multi-sports academy and you have chosen to specialise in **two** sporting activities. The selected activities must be from the Approved Activity list (see the [OCR website](#)). As part of your induction, you have been asked to test and record your current fitness levels and demonstrate the relevance of your results to the requirements of your selected activities.

To do this, and develop your own skills, you will conduct and carry out standard fitness and skill based fitness tests, interpreting the results and applying this information in a practical manner to different skills within your selected activities.

The academy coach has also asked you to assist in educating a new member, Anika Ling, about goal setting, principles of training and the benefits of different training methods. You will need to show them how to apply these to improve their performance in the **one** activity detailed in their profile.

You will then design a fitness training programme to enhance your performance in **one** selected activity and evaluate the programme's effectiveness.

Important Advice:

- Read through all the tasks carefully, so that you know what you will need to do to complete this assignment.
- Look at the marking criteria grids to see how the tasks will be marked. Your teacher can explain the marking criteria if you need help.
- You will need to use relevant skills/knowledge/understanding from other units you have studied in this qualification.
- You can use the [risk assessment template](#) provided for Task 4.
- No further templates have been provided for you to use; your teacher **should not** provide you with anything to complete. You are expected to structure your work for the other parts of this assignment yourself.

Your tasks and marking grids

Task 1 – Components of fitness applied in sport

Topic Area 1 is assessed in this task.

Your coach has asked you to conduct fitness tests to assess your own fitness levels.

Your task is to gain an understanding of your current level of fitness in **both** of your selected sporting activities, which must be selected from the approved activity list. You will need to consider which tests can be used to assess your fitness in each activity, and then interpret the results taking into account appropriate guidelines and protocols.

You **must**:

- Research and select the tests that are appropriate for each of your selected activities
- Undertake the selected fitness tests and interpret your results data.

The evidence for this task **must be** a written report or presentation.

Your evidence could be supported with one or more of the following:

- Observation statements and/or filmed/photographic evidence.

Total marks for Task 1: 12 marks

Advice

- Explain the different fitness tests and their associated components of fitness, making sure you include examples that are appropriate for each of the selected activities
- Make sure you follow appropriate test protocols
- Explain what the data tells you about your fitness levels in relation to the **two** activities chosen with reference to normative data where possible.

Topic Area 1: Components of fitness applied in sport

MB1: 1–4 marks	MB2: 5–8 marks	MB3: 9–12 marks
Fitness tests are briefly described with limited reference to the protocols.	Appropriate fitness tests are adequately described with sound reference to the protocols.	Appropriate fitness tests are described in detail with clear reference to the protocols.
Includes limited data and briefly outlines what it means to their fitness for the activities.	Adequately analyses the data from each test and what it means to their fitness for the activities.	Comprehensively analyses the data from each test and what it means to their fitness for the activities.

If your work does not meet any Mark Band 1 criteria, you will be awarded zero marks for this task.

Task 2 – Components of fitness applied in sport

Topic Area 1 is assessed in this task.

You need to understand how improving different components of fitness will help you improve your performance in both sporting activities.

Your task is to demonstrate to your coach which skills within your **two** selected activities are appropriate to each component of fitness. This will help you and your coach understand how having better fitness levels can improve your skills.

You **must**:

- Research which components of fitness are relevant to skills in **both** activities
- Demonstrate the skills linked to each component of fitness for **both** activities
- Design tests for **two** main skills you have highlighted in **one** of your selected activities
- Do the skills tests and collate the results data

The evidence for this task **must be** a written report or presentation.

Your evidence could be supported with one or more of the following:

- Observation statements and/or filmed/photographic evidence.

Total marks for Task 2: 18 marks

Advice

- Consider including a wide variety of skills that cover the full range of components of fitness
- Consider which skills are most relevant to your selected activity and justify why
- Make sure your skills tests measure a component of fitness that will improve your performance.

Topic Area 1: Components of fitness applied in sport

MB1: 1–3 marks	MB2: 4–6 marks	MB3: 7–9 marks
<p>Few skills are briefly linked to components of fitness, may include limited examples.</p> <p>Demonstrates a limited range of skills relevant to the components of fitness.</p>	<p>A range of skills are linked to components of fitness, with sound and relevant examples given for each.</p> <p>Demonstrates a good range of skills relevant to the components of fitness.</p>	<p>A wide range of skills are linked to components of fitness in detail, with clear and relevant examples given for each.</p> <p>Confidently demonstrates a wide range of well developed skills relevant to the components of fitness.</p>
MB1: 1–3 marks	MB2: 4–6 marks	MB3: 7–9 marks
<p>Tests are described with basic examples of how they also measure an appropriate component of fitness.</p> <p>Includes some strengths and weaknesses of the data and briefly outlines what it means to their fitness for the activities.</p>	<p>Tests are described with adequate relevant examples of how they also measure an appropriate component of fitness.</p> <p>Adequately analyses the strengths and weaknesses of the data from each test and what it means to their fitness for the activities.</p>	<p>Tests are described in detail with clear and relevant examples of how they also measure an appropriate component of fitness.</p> <p>Comprehensively analyses the strengths and weaknesses of the data from each test and what it means to their fitness for the activities.</p>

If your work does not meet any Mark Band 1 criteria, you will be awarded zero marks for this task.

Task 3 – Apply principles of training in sport

Topic Area 2 is assessed in this task.

Anika Ling has joined the multi-sports academy and the coach would like to develop the new member's knowledge of training methods and SMART goal setting. Anika's current client profile provides the following information to assist you:

Name	Anika Ling
Gender	Female
Age range	22 years
Height	5.8 ft (1.77 m)
Weight	70.5 kg (11st. 1lbs)
Sporting and activity profile	<p>Moderately active lifestyle – Above 2 hours per week, this includes:</p> <ul style="list-style-type: none"> • 1 badminton coaching session • 1 circuit training session • 1 interval training session. <p>Local badminton player aiming to be selected for the county team.</p>
Programme aim	Improve agility to help maintain a rally in competitive games.

You need to present to Anika about the different training methods, and how they target different components of fitness.

Your task is to gather information on the SPOR and FITT principles, different methods of training and the use of SMART goal setting and create a presentation that **must** include the differences between aerobic and anaerobic exercise, using examples of each.

In relation to badminton and Anika's specific training programme goals, you **must**:

- Discuss how the principles of training (SPOR and FITT) and SMART goals can be applied to the Anika's training programme
- Describe the benefits and drawbacks of each training method
- Describe the differences between aerobic and anaerobic exercise.

The evidence for this task **must be** a written report or presentation.

Total marks for Task 3: 24 marks

Advice

- Research the different principles of training and SMART goal setting and how they are applied
- Know if the training methods are aerobic and anaerobic and discuss them in terms of intensity, duration and oxygen consumption for both
- Know the structure of each training method and how each can be adapted for use with different components of fitness
- Give practical application to all components of SMART in your selected activity.

Topic Area 2: Principles of training in sport

MB1: 1–5 marks	MB2: 6–10 marks	MB3: 11–15 marks
<p>A brief outline of SPOR and/or FITT principles and basic application to their selected sporting activity.</p> <p>A brief outline of SMART goals and basic application to their selected sporting activity.</p> <p>Few benefits outlined of applying the principles to the training programme.</p>	<p>SPOR and FITT principles are described with adequate relevant examples given for each aspect of their selected sporting activity.</p> <p>SMART goals are described with adequate relevant examples given for each aspect of their selected sporting activity.</p> <p>Adequately analyses the benefits of applying the principles to the training programme.</p>	<p>SPOR and FITT principles are described in detail with clear and relevant examples given for each aspect of their selected sporting activity.</p> <p>SMART goals are described in detail with clear and relevant examples given for each aspect of their selected sporting activity.</p> <p>Comprehensively analyses the benefits of applying the principles to the training programme.</p>
MB1: 1–3 marks	MB2: 4–6 marks	MB3: 7–9 marks
<p>A brief outline of their selected training methods, including a basic comparison of aerobic and anaerobic exercise.</p>	<p>Adequately analyses their selected training methods, including sound comparison of aerobic and anaerobic exercise.</p>	<p>Comprehensively analyses their selected training methods, including a clear and detailed comparison of aerobic and anaerobic exercise.</p>

If your work does not meet any Mark Band 1 criteria, you will be awarded zero marks for this task.

Task 4 – Organising and planning a fitness training programme

Topic Area 3 is assessed in this task.

Your coach has asked you to produce a six-week fitness training programme to improve your performance for **one** selected sporting activity.

Your task is to create a programme that addresses your performance needs as established previously.

You **must**:

- Plan and develop a six-week fitness training programme for your selected activity, which takes into account the aims of the programme, appropriate equipment, the organisation of the programme and takes into account appropriate principles of training
- You should include relevant warm up and cool down routines that can be used before and after each session, these do not have to change from session to session
- Complete an effective risk assessment that takes into account the safety considerations. (Please find a template at the end of the assignment).

The evidence for this task is your written plan for **one** specific activity, including your risk assessment.

Total marks for Task 4: 14 marks

Advice

- The key considerations when planning a session must be evident in your plan
- You do not have to use a different warm up and cool down for each session; your routines must however be suitable for the type of training within the main session. You may use the same routines more than once across your six-week training programme
- Show you have considered safe practice and included corrective actions for any risks identified
- Consider your knowledge gained from previous tasks to help select appropriate training methods and apply appropriate principles of training and SMART goal setting
- Make sure fitness tests are included and carried out at the start, and the end of the programme, so you can monitor your progress.

Topic Area 3: Organising and planning a fitness training programme

MB1: 1–4 marks	MB2: 5–10 marks	MB3: 11–14 marks
<p>Produces a basic plan which considers a limited number of requirements for an effective and safe fitness training programme.</p>	<p>Produces a mostly appropriate and sound plan which considers some of the requirements for an effective and safe fitness training programme.</p>	<p>Produces a fully appropriate and comprehensive plan which considers most of the requirements for an effective and safe fitness training programme.</p>
<p>Produces a basic risk assessment which considers few of the requirements for a safe fitness training programme.</p>	<p>Produces an appropriate and adequate risk assessment which considers some of the requirements for a safe fitness training programme.</p>	<p>Produces an appropriate and comprehensive risk assessment which considers most of the requirements for a safe fitness training programme.</p>

If your work does not meet any Mark Band 1 criteria, you will be awarded zero marks for this task.

Task 5 – Review own performance in planning and delivery of a fitness training programme

Topic Area 4 is assessed in this task.

Now you have completed the fitness training programme, your coach has asked you to evaluate how the programme went and how it could be improved for the future.

Your task is to present your evaluation to the coach of the multi-sports academy.

You **must**:

- Compare the pre and post test results for the fitness training programme
- Describe the strengths of the programme and the areas that need improving
- Describe how you adapted your plan
- Describe how the plan could be improved if the process was to be repeated in future.

The evidence for this task could be in the form of a written report.

Total marks for Task 5: 12 marks

Advice

- Refer to the goals set at the start of the programme and how these were achieved or not achieved
- Consider how much the programme changed from your original plan
- Reflect on the training methods you used, were they appropriate, what might you change in the future?
- Make sure you comment on the strengths and areas of improvement of your programme
- Consider how you may alter your programme going forward, justifying your opinion.

Topic Area 4: Evaluate own performance in planning and delivery of a fitness training programme

MB1: 1–4 marks	MB2: 5–8 marks	MB3: 9–12 marks
<p>Outlines a few areas that went well and did not go well in the planned fitness training programme.</p> <p>Briefly outlines a few areas that needed to be adapted in the planned fitness training programme. Makes basic suggestions for altering the plan going forward.</p> <p>Limited description of the effectiveness of the fitness training programme. An attempt to reference the goals and objectives is made.</p>	<p>Describes some areas that went well and did not go well in the planned fitness training programme.</p> <p>Describes some areas that needed to be adapted in the planned fitness training programme with some reflection and analysis when altering the plan.</p> <p>Adequate description of the effectiveness of the fitness training programme. Makes some reference to the goals and objectives.</p>	<p>Comprehensively describes most areas that went well and did not go well in the planned fitness training programme.</p> <p>Comprehensively describes all areas that needed to be adapted in the planned fitness training programme. Shows detailed analysis when altering the plan with justified suggestions.</p> <p>Comprehensive analysis of the effectiveness of the fitness training programme. Makes clear and detailed reference to the goals and objectives.</p>

If your work does not meet any Mark Band 1 criteria, you will be awarded zero marks for this task.

Marking criteria words

The tables below show the descriptor words that will be used in the Marking Criteria grids. They explain the type of evidence that you should expect to see to meet each descriptor word.

Mark Band (MB1) Words:

Word	Meaning
Basic	<ul style="list-style-type: none"> Work includes the minimum required. It is a starting point but is simplistic and not developed. Understanding and skills are applied in a way that partly achieves the wanted or intended result, but it would not be useable without further input or work.
Brief/Briefly	<ul style="list-style-type: none"> Work includes a small number of relevant facts or concepts but lacks detail, contextualisation or examples.
Dependent	<ul style="list-style-type: none"> The student can perform a task when given regular assistance or help.
Few	<ul style="list-style-type: none"> Work produced is restricted or narrow. It includes less than half of the information or examples expected for a full response.
Inefficient	<ul style="list-style-type: none"> Outputs are produced but with great expense or effort because of poor organisation or design and not making the best use of available resources.
Limited	<ul style="list-style-type: none"> Work produced is restricted in range or scope and includes only some of the information required. It evidences partial rather than full understanding. Work produced is a starting point rather than a developed process, concept or output.
Minimal	<ul style="list-style-type: none"> Includes very little in amount or quantity required.
Simple	<ul style="list-style-type: none"> Includes a small number of relevant parts, which are not related to each other.
Superficial	<ul style="list-style-type: none"> Work completed lacks depth and detail.

Mark Band (MB2) Words:

Word	Meaning
Adequate(ly)	<ul style="list-style-type: none"> • Work includes the appropriate number of relevant facts or concepts but does not include the full detail, contextualisation or examples.
Assisted	<ul style="list-style-type: none"> • The student can perform a task with occasional assistance or help.
Part(ly)/Partial	<ul style="list-style-type: none"> • To some extent but not completely. • Work produced is inclusive in range and scope. It evidences a mainly developed application of understanding, performance or output needed. • Work produced results in a process, concept or output that would be useable for its purpose.
Some	<ul style="list-style-type: none"> • Work produced is inclusive but not fully comprehensive. It includes over half the information or examples expected for a full response.
Sound	<ul style="list-style-type: none"> • Valid, logical, shows the student has secured most of the relevant understanding, but points or performance are not fully developed. • Applies understanding and skills to produce the wanted or intended result in a way that would be useable.

Mark Band (MB3) Words:

Word	Meaning
Accurate(ly)	<ul style="list-style-type: none"> Acting or performing with care and precision. Correct in all details.
All	<ul style="list-style-type: none"> Work produced is fully comprehensive and wide-ranging. It includes almost all, or all the information or examples expected for a full response.
Clear(ly)	<ul style="list-style-type: none"> Focused and accurately expressed, without ambiguity.
Complex	<ul style="list-style-type: none"> Includes many relevant parts, all of which relate to each other logically.
Comprehensive(ly)	<ul style="list-style-type: none"> The work produced is complete and includes everything required to show depth and breadth of understanding. Applies the understanding and skills needed to successfully produce the wanted or intended result in a way that would be fully fit-for-purpose.
Consistent(ly)	<ul style="list-style-type: none"> A level of performance which does not vary in quality over time.
Critical	<ul style="list-style-type: none"> Objective analysis and evaluation in order to form: a judgement, evaluation of the evidence or effective trouble shooting/fault finding.
Detailed	<ul style="list-style-type: none"> Gives point by point consideration of all the key information.
Effective	<ul style="list-style-type: none"> Applies the skills required to the task and is successful in producing the desired or intended result. The work produced is effective in relation to a brief.
Efficient	<ul style="list-style-type: none"> Able to produce results or outputs with the minimum expense or effort, because of good organisation or design and making the best use of available resources.
Full(y)	<ul style="list-style-type: none"> Work produced is comprehensive in range and scope. It evidences a fully developed application of understanding, performance or output needed. Work produced results in a process, concept or output that would be fully fit-for-purpose.
Independent(ly)	<ul style="list-style-type: none"> The student can perform a task without assistance or reliance on others.
Justify/Justified	<ul style="list-style-type: none"> The reasons for doing something are explained in full.
Most(ly)	<ul style="list-style-type: none"> Includes nearly all of what is expected to be included.
Wide (ranging)	<ul style="list-style-type: none"> Includes many relevant details, examples or contexts; all of which are fully detailed, contextualised or exemplified.

Teacher Observation Record

Please read the **guidance notes** on the next page before you complete this form.

Student name:	
Qualification:	OCR Level 1/Level 2 Cambridge National in Sport Science
Unit number and title:	Unit number: R181
	Unit title: Applying the principles of training: fitness and how it affects skill performance
Activity observed:	Task title:
	Task number:
Date activity completed:	
Additional evidence attached:	

TEACHER SECTION:	
<p>How did the student complete the activity? Your response must provide details of what the student did and how this relates to the relevant marking criteria.</p>	
STUDENT SECTION:	
I agree with my teacher's description of how I completed this activity.	Yes <input type="checkbox"/>
Additional student comments:	
Student's signature:	Date: (DD/MM/YYYY)
Teacher's name:	
Teacher's signature:	Date: (DD/MM/YYYY)

Teacher Observation Record Guidance notes

The class teacher and student being observed are responsible for completing this form.

The teacher uses the Teacher Observation Record to detail their observation of the student completing an activity. The completed form must give contextualised details of what the student did and how this relates to the marking criteria. Simply providing statements from the marking criteria is not acceptable. The evidence provided must be individual to the student.

The Teacher Observation Record is also used to show that the student agrees with the teacher's assessment of this activity.

The information given by the teacher must be shared with the student for the student to agree, or otherwise. If the student does not agree with the teacher's comments and links to the marking criteria, they must have the chance to talk about these further with the teacher to reach an agreed outcome **before** the work is submitted for moderation.

Both the teacher and student must sign and date the form to provide evidence of this agreement.

Additional evidence of the student completing the activity must also be provided with the form. Tasks 1, 2 and 3 lists the types of additional evidence that are acceptable.

Teacher Observation Records must:

- describe what the teacher observed the student doing
- state how well the activity was completed and the reasons for this evaluation
- include confirmation from the student that they agree with the comments and reasons
- be accompanied by additional evidence as required in Tasks 1, 2 and 3.

Teacher Observation Records must not:

- be a simple repeat of the grading criteria
- be completed by anyone except the teacher observing the activity and the student completing the activity
- be written by the student for the teacher to sign
- contain just a list of skills
- be used to evidence the achievement of a whole unit or task in isolation.

R181 Set Assignment – Risk Assessment Template

RISK ASSESSMENT – TASK 4

STUDENT NAME:				
SPORTING ENVIRONMENT:		(e.g. sports hall)		
Had some tutor support		Had little tutor support		Date completed:
STEP 1 – HAZARDS	STEP 2	STEP 3 – RESIDUAL RISK RATING	STEP 4	STEP 5 – EXISTING CONTROL MEASURES List what could be done to reduce the risks. Note any action that you think is needed
Identify significant hazards below	State the severity of the hazard (high, low, medium)	State the probability of the hazard occurring (high, low, medium)	List the people who are at risk from the hazards you have identified	



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