Cambridge Nationals

CAMBRIDGE OCR

Sample assessment material

Cambridge National in

Sport Science

Cambridge OCR Level 1/Level 2 Cambridge National in Sport Science

J828

R182: The body's response to physical activity and how technology informs this

Version 3.0

ocr.org.uk/cambridgenationals

Introduction

This is sample assessment material (SAM). It is an example Cambridge OCR-set assignment that we publish alongside a new specification to help illustrate the intended style and tasks of our set assignments.

We also produce two further specific resources to support you with using this SAM:

- An assessment story where we explain the research we have undertaken during the development of the qualification and how consultation with teachers, students and schools has helped shape our assessment approach.
- A student guide to NEA assignments in which we provide a summary for your students of key points about their Cambridge OCR-set assignments, including the importance of avoiding plagiarism.

Summary of updates

Section	Change	Version	Date
	New cover pages added. No other changes to the sample assignment.	3.0	June 2026

Cambridge OCR-set Assignment

Sample Assessment Material

Cambridge OCR Level 1/Level 2 Cambridge National in Sport Science Sample Set-Assignment

Unit R182: The body's response to physical activity and how technology informs this

This is a sample Cambridge OCR-set assignment which should only be used for practice. This assignment **must not** be used for live assessment of students.

The live assignments will be available on our secure website, 'Teach Cambridge'.

The Cambridge OCR administrative codes associated with this unit are:

- unit entry code R182
- certification code J828

The regulated qualification number associated with this unit is:

603/7106/7

Duration: Approximately 8 - 10 hours

Contents

Information for Teachers Using this Assignment

You **must**:

- 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 provided in Section 6 of the Specification **before** your students complete and you assess the set assignment.
- make sure that completion and assessment fully adhere to the rules and guidance provided in Section 6 of the Specification.
- give students the Student guide to NEA assignments before they start the assignment.
- allow students approximately 8 - 10 guided learning hours (GLH) to complete all tasks.

You **must not**:

- change or modify this assignment in any way.

Scenario for the assignment

The body's response to physical activity and how technology informs this

As part of your work with a local club you are going to assist the lead coach in delivering sessions to a variety of club members. In your preparations to assist them you need to develop your knowledge of how your cardio-respiratory and musculo-skeletal systems respond and adapt during short and long-term activity participation.

For this Scenario select from the following Training and Sport Activities, in the table below:

Training Activities **Relevant to Activities 1 and 3**	**Sports Activity** **Relevant to Tasks 1, 2 and 3**
Select a 15 minute continuous aerobic training activity, examples below: • Steady state running exercise of their choice • 15 mins on a treadmill • 15 mins on exercise bike • Basic body weight circuit training session – (1 minute's repetitions of - Press Ups, Lunges, Tricep Dips, Squats, Star Jumps, Sit ups, Crunches, Alternate leg and arm raisers).	Select a Sports activity from the list below: • Athletics – Sprinting, Jumping • Futsal • Roller Hockey

You have also been asked to look into the technology that is available to you as both a performer and to assist the lead coach. This will help to monitor both your cardio-respiratory and musculo-skeletal systems and inform how your performance can be improved.

Read through all of the tasks carefully, so that you know what you will need to do to complete this assignment.

Important:

- You will need to refer to the marking criteria grid. Your teacher can explain the marking criteria if you need further clarification.
- You will need to draw upon relevant skills/knowledge/understanding from other units you have studied in this qualification.
- No 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 – Short-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

Topic Areas 1, 2 and 3 are assessed in this task.

The coach has asked you to look at short-term effects of exercise. They want to know what responses are occurring and how these will affect your performance in your selected sport from the list given in the scenario.

Your task is to carry out an initial investigation to identify the responses that occur during 15 minutes of aerobic exercise.

For your selected training activity, **you must**:

- Use techniques to gather data to show the short term effects to your cardio-respiratory and musculo-skeletal systems when you complete the training activities
- Describe **how** both your cardio-respiratory and musculo-skeletal systems respond to the training activities
- Explain **why** these responses are occurring in each system and what benefit it is to you as the performer when you are carrying out your sport activity.

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

Total marks for Task 1: 12 marks

Advice

- Consider how the intensity varies in the different training activities
- Explain why the responses in the cardio-respiratory and musculo-skeletal systems are of benefit to you as a performer

Topic Area 1: The cardio-respiratory system and how the use of technology supports different types of sports and their intensities

Topic Area 2: The musculo-skeletal system and how the use of technology supports different types of sports and their movements

Topic Area 3: Short-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

MB1: 1-4 marks	MB2: 5-8 marks	MB3: 9-12 marks
Gives a **basic** outline of the techniques used to gather cardio-respiratory and musculo-skeletal systems data before and after completing their training activity. Supported with **limited** data.	**Adequately** describes the techniques used to gather cardio-respiratory and musculo-skeletal systems data before and after completing their training activity. Supported with an **adequate** range of data showing **some** of the changing variables.	**Comprehensively** describes the techniques used to gather cardio-respiratory and musculo-skeletal systems data before and after completing their training activity. Supported with **a wide range** of data **clearly** showing **all** the changing variables.
Briefly outlines short-term responses of both the cardio-respiratory and musculo-skeletal systems to the training activity. Gives **limited** or no explanation of why these have occurred.	**Sound** links are made between the intensity of the training activities, and the short-term responses of both the cardio-respiratory and musculo-skeletal systems. Gives **some** explanation of why these have occurred.	**Complex** links are made between the intensity of the training activities, and the short-term responses of both the cardio-respiratory and musculo-skeletal systems. **Comprehensively** discusses why these have occurred.
Briefly outlines what benefits these short-term responses could make to their performance in their selected-sport activity.	**Adequately** explains what benefits these short-term responses could make to their performance in their selected sport activity.	**Clearly** explains what benefits these short-term responses could make to their performance in their selected sport activity.

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

Task 2 – Long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

Topic Areas 1, 2, and 4 are assessed in this task

The coach has asked you to look into the long-term effects of participation in your selected sporting activity from the list given in the scenario. What happens to your cardio-respiratory and musculo-skeletal systems? Looking into this can ensure that your training sessions are effective for long-term participation.

Your task is to carry out research to explain the adaptations to both the cardio-respiratory and the musculo-skeletal systems during long-term participation in your selected sport activity. You should consider how long-term participation in your selected sport activity can have benefits and drawbacks for your cardio-respiratory and musculo-skeletal systems.

For your selected activity, **you must**:

- Gather information about the adaptations that will occur in both your cardio-respiratory and musculo-skeletal systems as a result of long-term participation
- Explain why these adaptations will occur in both your cardio-respiratory and musculo-skeletal system over a long period of time
- Discuss the benefits and drawbacks of adaptations that can occur with long-term participation.

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

Total marks for Task 2: 12 marks

Advice

- Consider the impact of long-term exercise on both systems and whether these are benefits or drawbacks to you for long-term participation in your selected activity
- activities can be short high intensity activities such as short distance cycle or swimming sprints, long duration games like football or rugby, strength activities such as gymnastics. You may also include any data / case study of a performer to support your explanation of the adaptations to both systems, the benefits, and drawbacks to you as the performer.

Topic Area 1: The cardio-respiratory system and how the use of technology supports different types of sports and their intensities

Topic Area 2: The musculo-skeletal system and how the use of technology supports different types of sports and their movements

Topic Area 4: Long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

MB1: 1-4 marks	MB2: 5-8 marks	MB3: 9-12 marks
The long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems are **briefly** described and are supported with **basic** examples from their selected sport activity.	The long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems are **adequately** discussed and supported with a **range** of examples from their selected sport activity.	The long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems are **comprehensively** discussed and supported with a **wide range** of well-developed examples from their selected sport activity.
Outlines **few** adaptations and makes **basic** suggestions as to why they have occurred, using **limited** examples from their selected sport activity.	Describes **some** adaptations and provides **some** explanation as to why they have occurred, using a **range** of examples from their selected sport activity.	Describes **in detail** adaptations and provides **clear** explanations why they have occurred, using a **wide range** of **well-developed** examples from their selected sport activity.
Limited discussion of the long-term benefits and/or drawbacks to them in their selected sport activity.	**Adequately** discusses the long-term benefits and drawbacks to them as a performer, using a **range** of examples from their selected sport activity.	Discusses in **detail** the long-term benefits and drawbacks of the adaptations to them as a performer, using a **wide range** of examples from their selected sport activity.

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

Task 3 – Technology and the cardio-respiratory and musculo-skeletal systems

Topic Areas 1 and 2 are assessed in this task.

The coach has asked you to investigate the technology that is available to performers in your selected sport activity from the list given in the scenario, from beginners to the elite level. They are interested in how technology can help you as a performer and them as a coach, by giving data on the responses and adaptations that occur as you warm up and train. This data would then assist in understanding how effective your warm up and training are.

Your task is to research the different cardio-respiratory and musculo-skeletal sports technology that is available and identify those which you could use for your selected sport activity.

For your selected activity, **you must**:

- Research different technologies that are available to you for monitoring both your cardio-respiratory and musculo-skeletal systems
- For your cardio-respiratory and musculo-skeletal system:
  - ☐ Explain the information this technology provides to support you as a performer, and your coach, to indicate the effectiveness of your training activity
  - ☐ Explain the information this technology provides to support you as a performer, and your coach, to indicate the effectiveness of your long-term selected sport activity participation.
- Discuss the benefits and drawbacks of using this technology for maximising your long-term participation.

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

Total marks for Task 3: 16 marks

Advice

- Ensure that reference is made to how your selected technology informs you as a performer, and how it informs your coach
- Explain how your selected technology can be used to maximise benefits and minimise the drawbacks to you as a performer in your selected activity, during short and long-term participation
- You may also include any data / case study of another performer to support your explanation of the information to the benefits and drawbacks of the technology.

Topic Area 1: The cardio-respiratory system and how the use of technology supports different types of sports and their intensities

MB1: 1-3 marks	MB2: 4-7 marks	MB3: 8-10 marks
Briefly outlines a type of technology that provides them as a performer **or** their coach with information regarding the cardio-respiratory system during training and participation in their selected activity. **Briefly** outlines how the technology can maximise benefits **and/or** minimise drawbacks for long-term participation in their selected activity.	**Adequately** describes a **range** of technology and the information it provides them as a performer **and/or** their coach with information regarding the cardio-respiratory system to support them during training and participation in their selected activity. **Adequately** explains how the technology can maximise benefits **and** minimise drawbacks for long-term participation in their selected activity.	**Comprehensively** describes how a **wide range** of technology provides them as a performer **and** their coach with information regarding the cardio-respiratory system to support them during training and to maximise participation in their selected activity. **Fully** explains how the technology can maximise benefits **and** minimise drawbacks for long-term participation in their selected activity.

Topic Area 2: The musculo-skeletal system and how the use of technology supports different types of sports and their movements

MB1: 1-2 marks	MB2: 3-4 marks	MB3: 5-6 marks
Briefly outlines a type of technology that provides them as a performer **or** their coach with information regarding the musculo-skeletal system during training and participation in their selected activity. **Briefly** outlines how the technology can maximise benefits **and/or** minimise drawbacks for long-term participation in their selected activity.	**Adequately** describes a **range** of technology and the information it provides them as a performer **and/or** their coach with information regarding the musculo-skeletal system to support them during training and participation in their selected activity. **Adequately** explains how the technology can maximise benefits **and** minimise drawbacks for long-term participation in their selected activity.	**Comprehensively** describes how a **wide range** of technology provides them as a performer **and** their coach with information regarding the musculo-skeletal system to support them during training and to maximise participation in their selected activity. **Fully** explains how the technology can maximise benefits **and** minimise drawbacks for long-term participation in their selected activity.

If your work does not meet 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 NEA 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	• 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	• Work includes a small number of relevant facts or concepts but lacks detail, contextualisation or examples.
Dependent	• The student can perform a task when given regular assistance or help.
Few	• Work produced is restricted or narrow. It includes less than half of the information or examples expected for a full response.
Hesitant(ly)	• Slow, uncertain, reluctant.
Inconsistent(ly)	• A level of performance which varies in quality over time.
Inefficient	• 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	• 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	• Includes very little in amount or quantity required.
Simple	• Includes a small number of relevant parts, which are not related to each other.
Superficial	• Work completed lacks depth and detail.

Mark Band (MB2) Words:

Word	Meaning
Adequate(ly)	• Work includes the appropriate number of relevant facts or concepts but does not include the full detail, contextualisation or examples.
Assisted	• The student can perform a task with occasional assistance or help.
Part(ly)/Partial	• 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	• Work produced is inclusive but not fully comprehensive. It includes over half the information or examples expected for a full response.
Sound	• 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)	• Acting or performing with care and precision. • Correct in all details.
All	• 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)	• Focused and accurately expressed, without ambiguity.
Complex	• Includes many relevant parts, all of which relate to each other logically.
Comprehensive(ly)	• 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.
Confident(ly)	• Showing certainty over the information presented. • Showing certainty in actions performed.
Consistent(ly)	• A level of performance which does not vary in quality over time.
Critical	• Objective analysis and evaluation in order to form: a judgement, evaluation of the evidence or effective trouble shooting/fault finding.
Detailed	• Gives point by point consideration of all the key information.
Effective	• 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	• 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)	• 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)	• The student can perform a task without assistance or reliance on others.
Justify/Justified	• The reasons for doing something are explained in full.
Most(ly)	• Includes nearly all of what is expected to be included.
Perceptive	• Having or showing insight.
Specific	• Evidence is tightly focused on the individual or activity in question, rather than general or generic.
Well developed	• The student evidences skills that are mature and well-practised. • The student evidences knowledge or awareness that demonstrate solid underpinning understanding of the situation.
Wide (ranging)	• Includes many relevant details, examples or contexts; all of which are fully detailed, contextualised or exemplified.

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