

Set assignment

**DRAFT**

LEVEL 3 CAMBRIDGE ADVANCED NATIONAL (AAQ) IN

# HUMAN BIOLOGY

**Extended Certificate H149**

For first teaching in 2025

**F174: Nutrition and metabolism**

# Introduction

**This is Sample Assessment Material (SAM). It is an example set assignment that we publish alongside a new specification to help illustrate the intended style and structure of our set assignments.**

During the lifetime of the qualification, updates to the set assignment template may happen. We always recommend you look at the most recent set of past set assignments where available.

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Helping young people develop an ethical view of the world



Equality, diversity, inclusion and belonging (EDIB) are part of everything we do

## Summary of updates

| Date      | Version | Page number | Summary of change    |
|-----------|---------|-------------|----------------------|
| July 2023 | 1 DRAFT | All         | Creation of document |

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- include perspectives that reflect the diverse cultural and lifestyle backgrounds of our society
- challenge prejudicial views and unconscious biases
- promote a safe and supportive approach to learning
- are accessible and fair, creating positive experiences for all
- provide opportunities for everyone to perform at their best
- are contemporary, relevant and equip everyone to live and thrive in a global, diverse world
- create a shared sense of identity in a modern mixed society with one humanity.

**To learn more, including our work on accessibility in our assessment materials, visit our [People and planet page](#).**

## OCR-set Assignment

### Sample Assessment Material

OCR Level 3 Cambridge Advanced National (AAQ) in Human Biology  
(Extended Certificate)

F174: Nutrition and metabolism

Scenario Title: An endurance cyclist

This is a sample 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 OCR administrative codes linked to this unit are:**

- unit entry code F174
- certification code H149

**The regulated qualification number linked to this unit is:**

TBC

#### Duration

About:

- 15 hours of supervised time (GLH)  
(work that **must** be completed under teacher supervised conditions)
- 10 hours of unsupervised time  
(work that students can complete independently without teacher supervision)

**All** this material **can** be photocopied. Any photocopying will be done under the terms of the Copyright Designs and Patents Act 1988 solely for the purposes of assessment.

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# Information and instructions for Teachers

## Using this assignment

This assignment provides a scenario and set of related tasks that reflect how people working in the nutrition sector would develop diets for patients.

The assignment:

- Is written so that students have the opportunity to meet the requirements of all assessment criteria for the unit.
- Will tell students if their evidence must be in a specific format. If the task does not specify a format, students can choose the format to use.
- **Must** be completed under teacher supervision. Any exceptions to this will be stated in the assessment guidance.

You **must**:

- Use an OCR-set assignment for summative assessment of students.
- Familiarise yourself with the assessment criteria and assessment guidance for the tasks. These are given at the end of each student task. They are also with the unit content in **Section 4** of the Specification. Assessment guidance is only given where additional information is needed. There might not be assessment guidance for each criterion.
- Make sure students understand that the assessment criteria and assessment guidance tell them in detail what they need to do in each task.
- Assessment guidance is only given where additional information is needed. There might not be assessment guidance for each criterion.
- Read and understand **all** the rules and guidance in **Section 6** of the Specification **before** your students start the set assignments.
- Make sure that your students complete the tasks and that you assess the tasks fully in line with the rules and guidance in **Section 6** of the Specification.
- Give your students the Human Biology **Student guide to NEA assignments** **before** they start the assignments.

You **must not**:

- Use live OCR-set assignments for practice or formative assessment. This sample assessment material **can** be used for practice or formative assessment.
- Use this sample assessment material for live assessment of students.
- Allow group work for **any** task in this assignment.
- Change any part of the OCR-set assignments or assessment criteria.

**Pages 1-4** are for teachers only. Please do **not** give **Pages 1-4** to your students.

You can give **any** or **all** of the pages **that follow** to your students.

Sample



# Tasks for students and assessment criteria

## Unit F174: Nutrition and metabolism

**Scenario Title:** An endurance cyclist.

### Scenario

You are a nutrition consultant who has been approached by a medical support team. This team provides nutritional advice for athletes.

You have been asked to create an advice pack for a cyclist who will be undertaking an endurance event which will last for 7 days. You will need to design a specialised diet, including meal plan(s), for the entirety of the 7-day event. You will also need to explain the scientific rationale behind the diet.

You have been provided with data and information about the cyclist that should be used to assess their dietary requirements.

### Information and data:

The cyclist is a 25-year-old male. He is 1.80 m tall and weighs 75 kg. He has a family history of heart disease. Tests have shown that he has good bone density and normal levels of cholesterol and blood glucose.

He has previously followed a diet recommended for cyclists of 5000 calories per day, consisting of 60-70% of calories as carbohydrate, 10-15% as protein and 15-25% as fat. However, he is currently following a balanced diet for normal activity based on average daily recommended values.

The cyclist has been informed that the event involves aerobic exercise in which he will cycle 100 km per day for 7 days.

He has been told that during the event he should drink between 500 and 700 cm<sup>3</sup> of fluids containing salt (sodium chloride) at a concentration of 500 mg dm<sup>-3</sup> every hour. However, he does not know if this is correct advice.

## Task 1

### What does the individual need in their diet?

Topic Areas 1 and 3 are assessed in this task.

#### The task is:

Research and review information about nutritional requirements for the individual in the case study.

Your evidence **must** include:

- A written introductory section of the advice pack

Use the assessment criteria below to tell you what you need to do in more detail.

| Pass  | Merit  | Distinction   |
|---|--|---|
| <b>P1: Explain</b> why the individual requires a specialised diet.  | <b>M1:</b> Use research to <b>describe</b> the details of medical guidance given in a similar situation to that in the case study. | <b>D1: Analyse</b> the benefits of having a specialised diet for the individual's physical and mental well-being. |
| <b>P2:</b> Use research to <b>describe</b> how the macronutrient requirements for the individual varies from an average person. | <b>M2: Explain</b> how the role of metabolism influences the creation of the specialised diet.                                     |   |
| <b>P3:</b> Use research to <b>describe</b> how the micronutrient requirements for the individual varies from an average person. |  |   |

## Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

| Assessment Criteria | Assessment guidance  |
|---------------------|--|
| Task 1              | <ul style="list-style-type: none"> <li>The research element of the criteria in this Task does <b>not</b> need to be completed under teacher supervised conditions but is necessary in order for students to access the criteria.</li> </ul>  |
| P1                  | <ul style="list-style-type: none"> <li>Students need to review information about nutritional requirements that are specific to the needs of the individual in the case study.</li> <li>They must recognise the needs of the individual in the case study and explain why a specialised diet is required.</li> </ul>  |
| P2                  | <ul style="list-style-type: none"> <li>Students must use research to describe the macronutrient requirements of the individual in the case study.</li> <li>Students must describe how the macronutrient requirements for the individual varies from the average person in terms of the average nutritional requirements and recommended values for daily intake.</li> </ul>        |
| P3                  | <ul style="list-style-type: none"> <li>Students must use research to describe the micronutrient requirements of the individual in the case study.</li> <li>Students must describe how the micronutrient requirements for the individual varies from the average person in terms of the average nutritional requirements and recommended values for daily intake.</li> </ul>        |
| M1                  | <ul style="list-style-type: none"> <li>Students must research and describe medical guidance that would be given to an individual in a similar situation (e.g. an endurance event). This should include details of monitoring and treatment of any disorders.</li> <li>The guidance should be from appropriate medical professionals relevant to the case study context.</li> </ul> |

### Advice:

- Remember to clearly reference any information used from books, websites or other sources to support your evidence.

## Task 2

### Creating meal plans to meet the requirements of the individual

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

#### The task is:

Create a specialised diet for the individual in the case study.

Design and create specific meal plan(s) that fulfils the specialised diet.

Your evidence **must** include:

- A written section in the advice pack with information about the specialised diet
- Written meal plan(s) to include in the advice pack

Use the assessment criteria below to tell you what you need to do in more detail.

| Pass   | Merit   | Distinction   |
|--|---|---|
| <b>P4: Create</b> an appropriate specialised diet.                                   | <b>M3: Explain</b> the potential risks and side-effects of the specialised diet for the individual. | <b>D2: Discuss</b> the advantages and disadvantages of the specialised diet for the individual. |
| <b>P5: Create</b> appropriate and customisable meal plan(s).                         | <b>M4:</b> Use appropriate calculations to <b>process</b> data when creating your meal plan(s).     | <b>D3: Justify</b> your choice of meal plan(s) for inclusion in the specialised diet.           |
| <b>P6: Explain</b> how the meals in the meal plan(s) need to be prepared and stored. |   |   |

## Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

| Assessment Criteria | Assessment guidance   |
|---------------------|---|
| P5                  | <ul style="list-style-type: none"> <li>Students must create an appropriate meal plan(s) relevant to the context of the case study. Meal plan(s) should be created to last the timeframe specified in the case study.</li> <li>The meal plan(s) should be customisable to show relevant substitutions that could be made for at least one meal each day for the duration of the timeframe specified in the case study.</li> </ul>                                    |
| M4                  | <ul style="list-style-type: none"> <li>Students must show evidence of processing data using appropriate calculations for creating the meal plan(s) in <b>P5</b>.</li> <li>The calculation(s) used will depend on the context of the case study but should be relevant and provide information to support the student in creating the meal plan(s).</li> <li>Students must show <b>at least one</b> example of their working out in the written evidence.</li> </ul> |
| D3                  | <ul style="list-style-type: none"> <li>Students must give valid reasons for their choice of meals in the meal plan(s) for the specialised diet, the customisable elements of the meal plan(s), and the preparation and storage requirements.</li> </ul>   |

### Advice:

- Remember to clearly reference any information used from books, websites or other sources to support your evidence.

### Task 3

#### Discussing the effect of the specialised diet on health

Topic Areas 2 and 4 are assessed in this task.

#### The task is:

Discuss how the specialised diet created in **Task 2** affects the individual, and how the individual can be supported.

Your evidence **must** include:

- A written section of the advice pack

Use the assessment criteria below to tell you what you need to do in more detail.

| Pass  | Merit   | Distinction  |
|---|---|--|
| <b>P7: Analyse</b> how the physiological health of the individual could be affected by the specialised diet.                  | <b>M5: Discuss</b> the use of external providers to support the individual with the specialised diet. | <b>D4: Assess</b> how the individual can mitigate the impacts on their health. |
| <b>P8: Analyse</b> the impact of the specialised diet on the social, emotional and mental well-being needs of the individual. |   |  |
| <b>P9: Identify</b> appropriate techniques for monitoring the individual on the specialised diet.                             | <b>M6: Justify</b> the monitoring techniques chosen for the individual.                               |  |
| <b>P10: Describe</b> appropriate interventions that may be required based on the monitoring results.                          |   |  |

#### Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

| Assessment Criteria | Assessment guidance  |
|---------------------|--|
| P9                  | <ul style="list-style-type: none"> <li>• The monitoring techniques might focus on how any of the physiological, social, emotional, and/or mental well-being of the individual can be monitored.</li> </ul> |
| M6                  | <ul style="list-style-type: none"> <li>• <b>M6</b> is an extension of <b>P9</b>.</li> </ul>  |

#### Advice:

- Remember to clearly reference any information used from books, websites or other sources to support your evidence.

## Task 4

### Reviewing the specialised diet and meal plan(s)

Topic Areas 1, 2, 3 and 4 are assessed in this task.

#### The task is:

Review your specialised diet and meal plan(s).

Your evidence **must** include:

- A written review section of the advice pack

Use the assessment criteria below to tell you what you need to do in more detail.

| Pass   | Merit  | Distinction   |
|--|--|---|
| <b>P11: Summarise</b> additional information that could increase confidence in the suitability of the specialised diet for the individual. | <b>M7: Analyse</b> how the additional information from <b>P11</b> would have been useful when creating the specialised diet. | <b>D5: Evaluate</b> the limitations of your meal plan(s) for the individual following the specialised diet. |
| <b>P12: Suggest</b> why the meal plan(s) may need to be adapted for another individual following the same specialised diet.                |  |   |

#### Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

| Assessment Criteria | Assessment guidance   |
|---------------------|---|
| P11                 | <ul style="list-style-type: none"> <li>• Students must consider what additional information would have been useful in order to increase the confidence in the suitability of the specialised diet. Students will summarise what additional information they would have wanted.</li> </ul> |
| M7                  | <ul style="list-style-type: none"> <li>• <b>M7</b> is an extension of <b>P11</b>.</li> </ul>  |

#### Advice:

- Remember to clearly reference any information used from books, websites or other sources to support your evidence.

# NEA Command Words

The table below shows the command words that may be used in the NEA assignments and/or assessment criteria.

| Command Word                     | Meaning   |
|----------------------------------|---|
| <b>Adapt</b>                     | <ul style="list-style-type: none"> <li>Change to make suitable for a new use or purpose</li> </ul>  |
| <b>Analyse</b>                   | <ul style="list-style-type: none"> <li>Separate or break down information into parts and identify their characteristics or elements</li> <li>Explain the different elements of a topic or argument and make reasoned comments</li> <li>Explain the impacts of actions using a logical chain of reasoning</li> </ul> |
| <b>Assess</b>                    | <ul style="list-style-type: none"> <li>Offer a reasoned judgement of the standard or quality of situations or skills. The reasoned judgement is informed by relevant facts</li> </ul>   |
| <b>Calculate</b>                 | <ul style="list-style-type: none"> <li>Work out the numerical value. Show your working unless otherwise stated</li> </ul>   |
| <b>Classify</b>                  | <ul style="list-style-type: none"> <li>Arrange in categories according to shared qualities or characteristics</li> </ul>  |
| <b>Compare</b>                   | <ul style="list-style-type: none"> <li>Give an account of the similarities and differences between two or more items, situations or actions</li> </ul>  |
| <b>Conclude</b>                  | <ul style="list-style-type: none"> <li>Judge or decide something</li> </ul>   |
| <b>Describe</b>                  | <ul style="list-style-type: none"> <li>Give an account that includes the relevant characteristics, qualities or events</li> </ul>   |
| <b>Discuss</b> (how/whether/etc) | <ul style="list-style-type: none"> <li>Present, analyse and evaluate relevant points (for example, for/against an argument) to make a reasoned judgement</li> </ul>   |
| <b>Evaluate</b>                  | <ul style="list-style-type: none"> <li>Make a reasoned qualitative judgement considering different factors and using available knowledge/experience</li> </ul>  |
| <b>Examine</b>                   | <ul style="list-style-type: none"> <li>To look at, inspect, or scrutinise carefully, or in detail</li> </ul>  |
| <b>Explain</b>                   | <ul style="list-style-type: none"> <li>Give reasons for and/or causes of something</li> <li>Make something clear by describing and/or giving information</li> </ul>   |
| <b>Interpret</b>                 | <ul style="list-style-type: none"> <li>Translate information into recognisable form</li> <li>Convey one's understanding to others, e.g. in a performance</li> </ul>   |
| <b>Investigate</b>               | <ul style="list-style-type: none"> <li>Inquire into (a situation or problem)</li> </ul>   |
| <b>Justify</b>                   | <ul style="list-style-type: none"> <li>Give valid reasons for offering an opinion or reaching a conclusion</li> </ul>   |
| <b>Research</b>                  | <ul style="list-style-type: none"> <li>Do detailed study in order to discover (new) information or reach a (new) understanding</li> </ul>   |
| <b>Summarise</b>                 | <ul style="list-style-type: none"> <li>Express the most important facts or ideas about something in a short and clear form</li> </ul>   |

We might also use other command words but these will be:

- commonly used words whose meaning will be made clear from the context in which they are used
- subject specific words drawn from the unit content.



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