

Cambridge TECHNICALS LEVEL 3

LABORATORY SKILLS

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Unit 4

Human physiology
Model Assignment

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Please note:

You can use this assignment to provide evidence for summative assessment, which is when the learner has completed their learning for this unit and is ready to be assessed against the grading criteria.

You can use this assignment as it is, or you can modify it or write your own; we give more information in this document under Guidance for tutors.

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Guidance for tutors on using this assignment

General

OCR Cambridge Technical model assignments are available to download from our website: www.ocr.org.uk.

The purpose of this assignment is to provide a scenario and set of tasks that allow students to understand the function of the key physiological systems, how to measure their functions and how key physiological indicators may vary in different populations. This will enable you to assess your learner against the requirements of the specified grading criteria. The scenario and its tasks are intended to give a work-relevant reason within the commercial use of human physiology for applying the skills, knowledge and understanding needed to achieve the unit.

This assignment will not instruct learners how to meet the highest grade. Whether learners achieve a pass, merit or distinction will depend on what evidence they produce.

You can modify the scenario we provide in this assignment to make it more relevant to your local or regional needs. Please refer to the information under 'Modifying the model assignment' later in this section.

You don't have to use this assignment. You can use it as a guide to help you to design your own assignment, and we provide an assignment checking service. You'll find more information on these matters in section 8 of the qualification handbook.

In the tasks, we'll refer to the format of evidence. Learners are **not** required to follow that format **unless** we tell them otherwise.

It's essential that the work every learner produces is their own. Please make sure you read through the information we give on authenticity in section 8 of the qualification handbook and make sure that your learners and any staff involved in assessment understand how important authenticity is.

We provide this assignment to be used for summative assessment. You must not use it for practice or for formative assessment.

Before using this assignment to carry out assessment

Learners will need to take part in a planned learning programme that covers the knowledge, understanding and skills of the unit.

When your learners are ready to be assessed, they must be provided with a copy of the following sections of this assignment:

- General information for learners
- Assignment for learners
- Evidence Checklist

They may carry out preparation prior to undertaking the tasks and there is no time limit for this.

When completing the assignment

You should use this assignment in conjunction with the unit specification and qualification handbook.

Resources to complete the tasks

There are resource requirements for this assignment. Every learner will need access to the following resources:

Tasks for LO1: *Presentation or booklet resource production material, which could include IT and online tools.*

Tasks for LO2: *Factsheet or leaflet resource production material, which could include IT and online*

Tasks for LO3: *Video resource production material or storybook or video transcript production material, and research material including IT and online tools.*

Tasks for LO4: The opportunity for students to use video production methods using handheld smart phones or *video resource production material, and research material including IT and online tools.*

Tasks for LO5: *Presentation production material, which could include IT and online*

Tasks for LO6: *Presentation or booklet resource production material, which could include IT and online tools.*

Health and Safety and the use of resources

The scenario requires some practical work and collection of primary data using sphygmomanometers, stopwatches, spirometers and peak flow meters. It is the centre's responsibility to ensure the safety of all learners. Tutors are responsible for making their own Risk Assessments for the tasks prior to learners attempting the practical work, and for ensuring that appropriate Health and Safety procedures are carried out. However, tutors must not provide learners with these Risk Assessments. Learners, prior to undertaking practical investigations submit a Risk Assessment.

Time

You should plan on 14 to 26 hours for learners to complete this assignment.

Learners must be allowed sufficient time to complete all the tasks. The amount of time may vary depending on the nature of the tasks and the ability of individual learners. To help with your planning, against each of the tasks we've given an indication of how long it should take.

Learners can produce evidence in several sessions.

Format of evidence

Learners have to produce evidence that demonstrates how they have met the grading criteria. At the very least they must produce evidence that meets **all** of the pass criteria.

Please make sure your learners realise that missing just one pass criterion means they will not pass the unit, even if they have successfully met the merit and distinction criteria.

We don't have specific requirements for the format of evidence in this assignment. We've said what format the evidence could take for each task. For example, if we say 'You could include a report on ...', the evidence doesn't have to follow any specific reporting conventions. You can modify the format of the evidence, but you must make sure the format doesn't prevent the learner from accessing the grading criteria.

For more guidance on generation and collection of evidence, please refer to the section 8 'Internal Assessment', in the qualification handbook.

Group work

If you plan to ask learners to work in a team to complete work for assessment, you need to determine at which point in an assessment task learners can work together. You must be sure that each learner can produce evidence of their own contribution to each grading criterion. You can give constructive feedback to learners about working as a group and direct them on team working skills because evidence of team working skills is not required by the unit. See our information on authentication, including group work and feedback to learners, in section 8 of the qualification handbook.

If witness statements are used to support learners' evidence, you'll need to complete an individual statement for each learner.

After completing the assignment

Once the learner has submitted their work to you to be assessed, you must judge or 'mark' the work against the grading criteria for the unit and identify one grade for the unit. For further information about assessment, please refer to section 8 of the qualification handbook.

Your assessment decisions must be quality assured across the cohort of learners in your centre who are being entered for the same unit. This must be done through an internal standardisation process. We give information on internal assessment and standardisation in the qualification handbook.

Reworking the assignment

If you and the learner feel they've not performed at their best during the assessment, the learner can, at your discretion, improve their work and resubmit it to you for assessment. If a learner is working on improving their work before it is resubmitted, you and the learner must continue to make sure the work is the learner's own.

Any feedback you give to the learner must not direct them on how to improve their work. You can identify what area of the work could be improved but you cannot give the learner any details about how they could improve it. You must follow the guidelines given in section 8 of the qualification handbook under 'Authenticity of learner work'.

Modifying the model assignment

The tasks in this assignment allow learners access to the full range of grades detailed in the grading criteria of this unit.

If you modify this assignment you must **not** change the grading criteria provided in the tasks for the learner or in the evidence checklist. These grading criteria are taken from the unit.

You can modify the scenario to suit your local or regional needs and the tasks may be contextualised to match any changes you have made to the scenario. If you supply your own drawings to support a different scenario, these must be sufficiently detailed for learners to complete the tasks.

You can modify the type of evidence and the format it takes, unless we expressly state that evidence must take a specific format.

You must also make sure that you avoid discrimination, bias and stereotyping and support equality and diversity. For more information, please see the section 'Designing your own assignments for internally assessed units' in section 8 of the qualification handbook.

If modifications are made to the model assignment, whether to the scenario alone, or to both the scenario and individual tasks, it is your responsibility to make sure that all grading criteria can still be met and that learners can access the full range of grades.

General information for learners

Q *What do I need to do to pass this assignment?*

A You need to produce evidence to meet the requirements of **all** the pass criteria for the unit this assignment relates to. If you miss just one pass criterion, you will not achieve this unit and will receive an unclassified result.

Q *What do I need to do if I want to get a merit or distinction for this assignment?*

A For a merit, you need to produce evidence to meet the requirements of **all** the pass criteria for the unit this assignment relates to **and** you need to produce evidence to meet **all** the merit criteria.

For a distinction, in addition to the above, you also need to meet **all** the distinction criteria for this unit.

Q *What help will I get?*

A Your tutor will support you when completing this assignment and will make sure that you know what resources or facilities you need and are allowed to use. We've given your tutor information about how much support they can give you.

Q *What if I don't understand something?*

A It's your responsibility to read the assignment carefully and make sure you understand what you need to do and what you should hand in. If you are not sure, check with your tutor.

Q *I've been told I must not plagiarise. What does this mean?*

A Plagiarism is when you take someone else's work and pass this off as your own, or if you fail to acknowledge sources properly. This includes information taken from the internet.

It's not just about presenting a whole copied assignment as your own; you will also be plagiarising if you use the ideas or words of others without acknowledgement, and this is why it's important to reference your work correctly (see Q&A below for more information on referencing).

Plagiarism has serious consequences; you could lose the grade for this unit or you may not be allowed to achieve the whole qualification.

Always remember that the work you produce must be your own work. You will be asked to sign a declaration to say that it is.

Q *What is referencing and where can I find out more information about it?*

A Referencing is the process of acknowledging the work of others. If you use someone else's words and ideas in your assignment, you must acknowledge it, and this is done through referencing.

You should think about why you want to use and reference other people's work. If you need to show your own knowledge or understanding about an aspect of subject content in your assignment, then just quoting and referencing someone else's work will not show that **you** know or understand it. Make sure it's clear in your work how you are using the material you have referenced **to inform** your thoughts, ideas or conclusions.

You can find more information about how to reference in *The OCR Guide to Referencing* available on our website: <http://www.ocr.org.uk/Images/168840-the-ocr-guide-to-referencing>

Q ***Can I work in a group?***

A Yes. However, if you work in a group at any stage, you must still produce work that shows your individual contribution. Your tutor can advise you how to do this.

Q ***Does my work for each task need to be in a particular format?***

A You can present your work in a variety of ways – it can be handwritten, word-processed, on video or in digital media. What you choose should be appropriate to the task(s) and your tutor can advise you. There may be times when you need proof that you have completed the work yourself: for example, if you do something during work placement that you want to use as evidence, the tutor might ask the employer to provide a witness statement.

Make sure you check the wording in each task carefully. For each task, we'll tell you if your evidence has to be in a specific format:

- If we say use the word '**must**', for example 'You must produce a report' or 'Your evidence/work must include a diagram', then you must produce the work in the stated format.
- If we use the word '**could**', for example 'You could include sketches of your ideas' or 'You could do this by annotating your diagram', this means that you are not required to follow the format we have given, but you must make sure that the work you do produce allows you to demonstrate the requirements of the grading criteria.

If you are unsure about what evidence you need, please ask your tutor.

Q ***Can I ask my tutor for feedback on my work?***

A Yes, but they can't give you detailed feedback.

We have given your tutor instructions on what kind of feedback they can give you. For example, they are **not** allowed to tell you exactly what to do to make your work better, but they **can** remind you about what they've taught you and you can use this additional learning to try and improve your work independently. They can say what they've noticed might be wrong with your work, for example if your work is descriptive where an evaluation is required, but your tutor can't tell you specifically what you need to do to change it from a description to an evaluation – you will need to work out what you need to do and then do it for yourself.

Q ***When I have finished, what do I need to do?***

A If you have included the personal details (such as name, address or date of birth) of someone other than yourself in your work, this must be blanked out (anonymised) – your tutor will tell you how to do this. You don't need to do this for information contained in references.

You can complete the evidence checklist to show your tutor where they can find the evidence for each grading criterion in your work. You should make sure your work is labelled, titled and in the correct order for assessing. Hand in the work that you've completed for each task to your tutor. They might ask to see your draft work, so please keep your draft work in a safe place.

Q ***How will my work be assessed?***

A Your work will be marked by someone in your centre who has been authorised to do so.

They will use the information in the grading criteria to decide which grade your work meets. The grading criteria are detailed in each unit and are also given in the tasks within this assignment. Please ask your tutor if you are unsure what the grading criteria are for this assignment.

Assignment for learners

Unit 4: Human physiology

Scenario

You are a university lecturer responsible for trainee nurses about to embark on their first placements at OCR General Hospital. Before they are able to work with patients they must have an understanding of the main organ systems and common diseases that occur within them. In addition to this they must demonstrate knowledge of disease in different populations.

Introduction to the tasks

In these tasks you will be required to demonstrate your knowledge and understanding of human physiology. This will be through the development of:

- Learning materials on the digestive, musculoskeletal, respiratory, cardiovascular and immune systems and bodily fluids
- Instructional materials on taking key physiological measurements
- Practical application on taking key physiological measurements.

Evidence for these tasks can include:

- Video and audio clips and recordings
- Online and mobile activities
- Presentations
- Formal and informal reports, newsletters and articles
- Narrative scientific article
- Diagrams/photographs/posters
- Risk assessments

Before starting the assessment assignment you must have available the Unit Specification so you are aware of the necessary content coverage.

The tasks

Task 1: The digestive system

(This task should take between 3 and 4 hours.)

Learning Outcome 1: Understand the structure and functions of the digestive system

There are a number of common diseases that occur in patients admitted to hospital. One of the major organ systems commonly affected is the digestive system. You must ensure the trainees have an understanding of the structure of digestive system and a common disorder related to it so that they are able to diagnose it if a patient presents with the symptoms.

Your task is to:

Produce a resource on the digestive system and a digestive disorder.

Pass	Merit	Distinction
P1: Describe how food is processed by the digestive system	M1: Explain the digestive related symptoms of someone with a common digestive disorder	
Tasks/Evidence		
<ul style="list-style-type: none">You must produce a resource such as a presentation or booklet (eg, based on PowerPoint or Publisher) on "The digestive system". This must allow the trainees to understand the organs that make up the digestive system and how they enable food to be digested and absorbed.Produce a second part to the resource focussing on one common digestive disorder. You must explain the symptoms caused by this disorder.		

Task 2: The musculoskeletal system

(This task should take between 2 and 5 hours.)

Learning Outcome 2: Understand the role and function of the musculoskeletal systems

The musculoskeletal system has a number of key physiological roles. It supports the body and allows movement to occur and also defends against disease. Trainees are required to produce an essay to demonstrate their knowledge of the musculoskeletal system and need a resource to use to enable them to complete their essay.

Your task is to:

Produce a resource on “the musculoskeletal system”.

Pass	Merit	Distinction
P2: Describe the importance of the musculoskeletal system in maintaining structure and movement of the body		D1: Explain the importance of bone marrow to the skeletal and immune system
Tasks/Evidence		
<ul style="list-style-type: none">You must produce a resource such as a factsheet or webpage (eg, based on Publisher or PowerPoint) on “The musculoskeletal system”. This must allow the trainees to understand the role of the musculoskeletal system in maintaining the structure and movement of the body.Produce a second part to the resource explaining the importance of the role of bone marrow to both the skeletal and immune system.		

Task 3: The cardiovascular system

(This task should take between 2 and 4 hours.)

Learning Outcome 3: Be able to assess how the cardiovascular system functions in the body

The trainees must be able to take basic cardiovascular measurements and require a resource they can use for reference. They are also required to understand how bodily functions can be affected by cardiovascular disorders.

Your task is to:

Produce a training video on “key cardiovascular measurements”.

Pass	Merit	Distinction
P3: Take a range of measurements related to the cardiovascular system, relating the results to its functions	M2: Explain how common cardiovascular disorders can affect the functions in the body	
Tasks/Evidence		
<ul style="list-style-type: none">• Produce a video demonstrating how to take and record blood pressure using a sphygmomanometer, pulse rate using a stopwatch and an electrocardiogram (ECG). For each technique you must give the range for a normal healthy 25 year old male and explain what values outside of these ranges may indicate.• Produce a second part to the video explaining how common cardiovascular conditions may affect the organs that make up the cardiovascular system.		

Task 4: The respiratory system

(This task should take between 2 and 4 hours.)

Learning Outcome 4: Be able to assess how the respiratory system functions in the body

The trainees must be able to take basic measurements of the respiratory system and require a resource they can use for reference. They are also required to understand different populations of people are affected by respiratory system disorders.

Your task is to:

Produce a training video on “respiratory system measurements”.

Pass	Merit	Distinction
P4: Take a range of measurements related to the respiratory system, relating the results to its functions	M3: Investigate effects on the respiratory system in different populations	
Tasks/Evidence		
<ul style="list-style-type: none">Produce a storyboard or transcript for a video demonstrating how to take and record peak flow, a spirometer trace and measure breathing rate. For each technique you must give the range for a normal healthy 25 year old male and explain what values outside of these ranges may indicate.Produce a second part to the video explaining how common respiratory system disorders affect and occur differently in different populations.		

Task 5: The importance of regulating body fluids

(This task should take between 2 and 3 hours.)

Learning Outcome 5: Understand how homeostasis maintains balance within the body

The trainees require an understanding of the importance of regulating body fluids as they may be asked to carry out techniques doing this when on their placement.

Your task is to:

Produce a resource outlining “the importance of regulating body fluids”.

Pass	Merit	Distinction
P5: Outline the importance of regulating body fluids in the body		
Tasks/Evidence		
<ul style="list-style-type: none">You must produce a resource such as a presentation (eg, based on PowerPoint) on “The importance of regulating body fluids”. This must explain to the trainees why it is important to regulate body fluids.		

Task 6: The immune system

(This task should take between 3 and 6 hours.)

Learning Outcome 6: Understand the role and function of the immune system

One of the first tasks the trainees are likely to carry out is to administer influenza vaccinations. It is important that they understand the function of the immune system and how vaccines prevent disease.

Your task is to:

Produce a resource outlining “the importance of the immune system”.

Pass	Merit	Distinction
P6: Describe the immune system, outlining its function		D2: Explain how the immune system functions when a vaccine is administered thereby preventing infection by certain diseases
Tasks/Evidence		
<ul style="list-style-type: none">You must produce a resource such as a presentation or booklet (eg, based on PowerPoint or Publisher) on “The immune system”. This must allow the trainees to understand the function of the immune system.Produce a second part to the resource focussing vaccines. You must explain how vaccines prevent infection by particular diseases.		

Evidence Checklist

OCR Level 3 Cambridge Technicals in Laboratory Skills

Unit 4: Human physiology

LEARNER NAME:

For PASS have you: (as a minimum you have to show you can meet every pass criterion to complete the unit)	Where can your tutor find the evidence? Give page no(s)/digital timings, etc.
P1: Described how food is processed by the digestive system	
P2: Described the importance of the musculoskeletal system in maintaining structure and movement of the body	
P3: Taken a range of measurements related to the cardiovascular system, relating the results to its functions	
P4: Taken a range of measurements related to the respiratory system, relating the results to its functions	
P5: Outlined the importance of regulating body fluids in the body	
P6: Described the immune system, outlining its function	

For Merit have you:	Where can your tutor find the evidence? Give page no(s)/digital timings, etc.
M1: Explained the digestive related symptoms of someone with a common digestive disorder	
M2: Explained how common cardiovascular disorders can affect the functions in the body	
M3: Investigated effects on the respiratory system in different populations	

For Distinction have you:	Where can your tutor find the evidence? Give page no(s)/digital timings, etc.
D1: Explained the importance of bone marrow to the skeletal and immune system	
D2: Explained how the immune system functions when a vaccine is administered thereby preventing infection by certain diseases	

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ocr.org.uk/science

or call our Customer Contact Centre on **02476 851509**

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