

Cambridge TECHNICALS LEVEL 3

LABORATORY SKILLS

Cambridge
TECHNICALS
2016

Unit 14

Environmental management

Model Assignment

J/507/6161

Version 1 - November 2016

ENVIRONMENT
AGENCY

Contents

Guidance for tutors on using this assignment	3
General.....	3
Before using this assignment to carry out assessment.....	3
When completing the assignment.....	4
Resources to complete the tasks.....	4
Time	4
Format of evidence.....	4
Group work.....	5
After completing the assignment	5
Reworking the assignment	5
Modifying the model assignment	5
General information for learners	6
Assignment for learners	8
Scenario	8
The tasks.....	9
Task 1: Environmental characteristics	9
Task 2: Current pollution levels	10
Task 3: Regulations.....	11
Task 4: Environmental management in practice.....	12
Evidence Checklist	14

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.

ALL THESE MATERIALS MAY BE PHOTOCOPIED. Any photocopying will be done under the terms of the Copyright Designs and Patents Act 1988 solely for the purposes of assessment.

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 outlines the legal and regulatory frameworks underpinning environmental management practice and specific issues of importance. These will include water quality management, managing industrial and natural environments and environmental assessments and reporting. Involves an environmental survey of a site or sites using environment testing techniques on water, air, soil, diversity of flora and fauna.

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:

Access to the teaching content coverage of the Unit Specification for each LO.

Tasks for LO2 – Equipment to carry out an environmental investigation.

Tasks for LO3 – Access to environmental regulations.

Tasks for LO4 - A case study of the use of one environmental management assessment technique

Health and Safety and the use of resources

The scenario requires some practical work and collection of primary data. 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 15 to 20 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.

If you're using this model assignment and delivering the Foundation Diploma or Diploma you have an opportunity to secure meaningful employer involvement by working with an employer to modify it.

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 [The OCR Guide to Referencing](http://www.ocr.org.uk/i-want-to/skills-guides/) available on our website: <http://www.ocr.org.uk/i-want-to/skills-guides/>.

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 14: Environmental Management

Scenario

Environmental management strategy

A major energy infrastructure project is to be proposed for your area, with the inevitable environmental impacts. The project is to be partly funded through an international intergovernmental organisation, and hence must meet the highest environmental protection standards.

As an independent environmental management consultant, you have been asked by the international organisation to develop an environmental management strategy for the project throughout its lifecycle, from initial proposal, through completion and ultimately decommissioning.

Introduction to the tasks.

In these tasks you will be required to demonstrate your knowledge and understanding of the principles and applications of environmental management. This will be through the development of:

- Learning characteristics of environments
- Carrying out an environmental investigation
- Outlining relevant environmental regulations
- Examining a case-study describing environmental management assessment technique

Evidence for these tasks can include:

- Video and audio recordings
- Presentations
- Written reports
- Presentations and notes
- Diagrams/photographs
- 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: Environmental characteristics

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

Learning Outcome 1: Understand principal characteristics of environments

A vital part of the infrastructure proposal is to engage closely with local communities, to provide them both with the necessary information, and the necessary background knowledge and understanding to interpret the information.

To this end, you have been asked to produce an informative and impartial resource, such as a newsletter or booklet, which will enable the general public to understand key ideas and concepts.

Pass	Merit	Distinction
P1: Describe principal characteristics of a natural environment		
P2: Describe a lifecycle of a built environment		
Tasks/Evidence		
<p>You must produce an informative and impartial resource such as a newsletter or booklet that describes the principal characteristics of natural and built environments to a group who, whilst aware of and concerned with environmental matters, would benefit from improved background knowledge and interpretive skills.</p> <p>Your resource should include ideas around the range and characteristics of natural environments and around built environment life cycles.</p>		

Task 2: Current pollution levels

(This task should take between 5 and 6 hours.)

LO2: Be able to identify pollution in the environment

An important aspect of the proposed project will be to protect the environment against pollution. To this end, it is essential that a “baseline” study of pollution be carried out to establish current pollution levels and their impacts.

You should identify sites likely to be affected by the proposed project and carry out appropriate pollution tests e.g. the use of indicator species, air and water quality, biodiversity, building erosion.

Your task is to:

Carry out a pollution investigation

Pass	Merit	Distinction
P3: Conduct safety assessments of field activity and laboratory activities		
P4: Carry out an environmental investigation, to include field and laboratory work which produces both qualitative and quantitative data	M1: Analyse results from the investigation in P4	
Tasks/Evidence		
<p>You must safely carry out an environmental investigation, collecting data relevant to pollution control and producing a relevant analysis.</p> <p>For this task, evidence should consist of a well-kept field and laboratory log, containing records of all investigations, their outcomes and analysis such as full records of pollution data and descriptions of field and laboratory techniques used.</p>		

Task 3: Regulations

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

Learning Outcome 3: Understand how legislation, regulation and agreements impact on managing natural and built environments

The supporting organisation needs to be fully aware of relevant local legislation and regulations, and how these comply or conflict with any procedures or guidelines the organization might have as conditions for proceeding with the project. You have been asked to prepare a short presentation which outlines relevant regulations, legislation and agencies, and how these will impact decisions to be made. You should bear in mind that your audience may not be familiar with national regulations and agencies, but will have at least an outline view of international agreements.

Your task is to:

Produce a short presentation, newsletter or poster display n on regulations, legislation and agencies.

Pass	Merit	Distinction
P5: Describe how domestic or EU legislation impacts on the management of an environment		
P6: Describe how natural or built environments are influenced by Supra-national agreements		
Tasks/Evidence		
<p>You must produce a short presentation outlining relevant environmental regulations, legislation and agencies of both domestic and European and show how these connect with international agreements.</p> <p>Your presentation could concentrate on particular aspects such as environmental protection and planning, air and water quality management and waste handling</p>		

Task 4: Environmental management in practice

(This task should take between 2 and 3 hours)

Learning Outcome 4: Understand environmental management assessments

A case study showing how environmental management for a given project can be implemented is to be used in the proposal for the new project. You have been asked to find and research a suitable case study, and show how the environmental management techniques used can be applied to the new project.

You should prepare this as a formal report on the case study, describing the techniques used and containing an evaluation of its effectiveness.

Your task is to:

Produce a report on a relevant case study of environmental management to include descriptions of techniques and evaluations of effectiveness.

Pass	Merit	Distinction
P7: Describe a case study of the use of one environmental management assessment technique	M2: Evaluate the use of the environmental management assessment technique in P7 in terms of its advantages, disadvantages and consequences	
Tasks/Evidence		
You must produce a formal report of a relevant environmental management case study with a description of techniques used and evaluations of effectiveness. Depending on the nature of your subject, your report could consider aspects of environmental management such as ecological footprinting, life-cycle analysis and environmental impact assessments.		

Task 5: Communicating your findings

(This task should take between 3 and 4 hours)

Learning Outcome 5: Be able to carry out and report outcomes of an environmental management study

As a part of informing local communities and industries about the project, the international organisation is organising an open conference to publicise the proposed infrastructure project.

Your role, as an environmental scientist, is to prepare a presentation on the relevant case study you've examined, and show how:

- The processes it uses are suitable for the proposed project
- It will be adapted to the new project
- Any issues arising (eg, failures in process or outcomes) will be remedied.

It is expected that the audience will be drawn from local communities, councils and industries, and you should ensure that your presentation uses language and terminology suitable for these audiences. You may wish, for example, to select to prepare a presentation for uninformed communities, whilst colleagues prepare presentations for industry executives etc.

Your task is to:

Provide a report that describes the environmental management case study for the public, industry and media, ensuring and justifying the choice of material as suitable for the intended audience.

Pass	Merit	Distinction
P8: Provide a report on at least one environmental management case study for a given target audience	M3: Justify the suitability of the report for the target audience in terms of the management technique, and the level and scope of the content	D1: Critically reflect on the report, and recommend changes so that it would present the management scenario to other audiences
P9: Describe how the report is made relevant to the given target audience		
Tasks/Evidence		
<p>You must produce a presentation that describes the environmental management case study for the public, industry and media, ensuring and justifying the choice of material as suitable for the intended audience.</p> <p>You should ensure the material you produce communicates clearly the scope of your study, evidence and techniques used and clear statements of conclusions and recommendations.</p>		

Evidence Checklist

OCR Level 3 Cambridge Technicals in Laboratory Skills

Unit 14: Environmental management

LEARNER NAME:

For PASS have you:	Completed (✓)	Ref/Page no(s)/DVD timings, etc.
P1: Described principal characteristics of a natural environment?		
P2: Described a lifecycle of a built environment?		
P3: Conducted safety assessments of field activity and laboratory activities?		
P4: Carried out an environmental investigation, and included field and laboratory work which produces both qualitative and quantitative data?		
P5: Described how domestic or EU legislation impacts on the management of an environment?		
P6: Described how natural or built environments are influenced by Supra-national agreements?		
P7: Described a case study of the use of one environmental management assessment technique?		
P8: Provided a report on at least one environmental management case study for a given target audience?		
P9: Described how the report is made relevant to the given target audience?		

For Merit have you:	Completed (✓)	Ref/Page no(s)/DVD timings, etc.
M1: Analysed results from the investigation in P4?		
M2: Evaluated the use of the environmental management assessment technique in P6 in terms of its advantages, disadvantages and consequences?		
M3: Justified the suitability of the report for the target audience in terms of the management technique, and the level and scope of the content?		

For Distinction have you:	Completed (✓)	Ref/Page no(s)/DVD timings, etc.
D1: Critically reflected on the report, and recommended changes so that it would present the management scenario to other audiences?		

To find out more
ocr.org.uk/science

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

Alternatively, you can email us on **vocational.qualifications@ocr.org.uk**



OCR is part of Cambridge Assessment, a department of the University of Cambridge.

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored. ©OCR 2015 Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee. Registered in England. Registered office 1 Hills Road, Cambridge CB1 2EU. Registered company number 3484466. OCR is an exempt charity.