

Environmental and Land-based Studies

Level 3 Unit 2: The management of natural resources and successful production systems

Sample scheme of work

This is an example of a scheme of work. You can adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory workshops to support learners who have/need additional learning time.

This unit is assessed through a centre set and marked assignment.

Total GLH	60
Delivery model	Based on teaching three-hour sessions.
Aim	This unit looks at the effects of both inanimate and living resource management. It will cover the methods used to ensure the high standards of the product, including welfare, are maintained or improved.
Notes	The three functional skills units for ICT (use ICT appropriately, find and select information, and develop, present and communicate information) are abbreviated as follows: Use ICT, F&S ICT and DPC ICT.

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
<p>1 Introduction to the unit</p>	<p>Tutor to introduce the unit, explaining why resource management is important to environmental and land-based enterprises.</p> <p>Learners to thought shower the requirements of plants and animals by society.</p> <p>Use a range of scenario cards and rotate. Base the scenarios on enterprises within the local area; obtain details of management programmes already in place. Learners should describe the management programmes they think would be in place.</p> <p>Follow with a group discussion to compare the management programmes written by the learners to those actually in place.</p> <p>Alternative activity: if the estate has the facilities, view a range of plants and animals and report on the management programmes in place.</p>	AC1a	IE3 CT1 TW1	SL R	3	

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
<p>2 Welfare of plant resources</p>	<p>Learners must list examples of: wild plants, cultivated plants, wild animals and production animals that are used within the ELB industry in the UK. Extend this to cover the industry worldwide.</p> <p>Arrange for a visit to a greenhouse to look at management programmes to ensure plant welfare.</p> <p>The tour/talk should include details on all aspects of the management care to programmes in place and the job roles and responsibilities to ensure these resources meet their purpose.</p>	AC1b	CT2	SL	3	
<p>3 Welfare of plant resources (continued)</p>	<p>Using a slide show ask learners to identify a range of wild plants, cultivated plants, wild animals and production animals.</p> <p>Arrange for a visit to an arable farm to look at management programmes to ensure plant welfare.</p> <p>The tour/talk should include details on all aspects of the management care to programmes in place and the job roles and responsibilities to ensure these resources meet their purpose.</p> <p>Learners must describe and evaluate the management programme in place to maintain plant welfare for two plants.</p>	AC1b	CT1, 2 IE6	SL W	3	

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
4 Welfare of animal resources	<p>Arrange for a visit to a livestock production farm, preferably with some show stock. Learners must prepare questions to ask about the management programmes used to maintain high standards of welfare. Choosing a farm that has both production and show animals will highlight if there is any difference in the management programme of these animals.</p> <p>The tour/talk should include details on all aspects of the management care to programmes in place and the job roles and responsibilities to ensure these resources meet their purpose.</p>	AC1b AC2b	CT1, 2 IE6	SL W	3	
5 Welfare of animal resources (continued)	<p>Arrange for a visit to an ELB sector such as racing stables to view management programmes to maintain high standards of welfare.</p> <p>The tour/talk should include details on all aspects of the management care to programmes in place and the job roles and responsibilities to ensure these resources meet their purpose.</p> <p>Learners must evaluate these programmes in the form of a magazine article. They must consider the economic aspects of this type of management plan.</p>	AC1b AC2b	CT1, 2 IE6	SL W	3	

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
6 Comparison of welfare management programmes for wild plants and cultivated plants and for wild animals and production animals	<p>Conduct a class discussion on the methods used to maintain wild plant and animal welfare.</p> <p>Compare the methods of maintaining welfare for wild plants and cultivated plants, and then for wild animals and production animals.</p> <p>The tutor should lead a discussion on the influences of poor welfare management programmes on resources and the ELB enterprise. Consider the domino effect.</p>	AC1a, b AC2b	TW2	SL W	3	
7 Comparison of welfare management programmes for wild plants and cultivated plants and for wild animals and production animals (continued)	<p>For a given plant or animal disease, learners should compare the management programmes that will be put in place to respond to this for both wild and cultivated/production plants and animals.</p> <p>The discussion must cover the timing, duration and intensity of the welfare management programmes.</p>	AC1a, b AC2b	IE6 CT1	SL W	3	
8 Resource management	<p>Conduct a class discussion on sustainability (economic and environmental). Look at examples within the ELB industry where poor resource management is causing a shortage of a particular resource.</p> <p>Learners must review the examples used and discuss management programmes that could have been put in place to reduce the stress upon this resource.</p> <p>From scenarios of poor resource management within an enterprise, learners should predict the effects this will have on the business.</p>	AC1a AC2b AC3c, d	TW1, 2, 4	SL W	3	

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
9 Management of resources intended for food manufacturing	Invite a guest speaker from the National Farmers' Union to cover: <ul style="list-style-type: none"> • the regulations that must be met before plants or animals can enter the food chain • the care management programmes that are in place to maintain health and welfare • the quality management standards that must be met before these resources can enter the food chain • how the residual products may be managed • the impact of current environmental issues on the maintenance of the resources. <p>Learners should participate in a question and answer session.</p> <p>Learners must research into current developments within plants and animals intended for food, eg selective breeding of corn to reduce waste and more efficient harvesting.</p>	AC2a–c	CT2 IE3	SL F&S ICT DPC ICT	3	
10 Visit to a golf course	The green keeper's tour of the golf course should identify the different plant material to be found. <p>Discuss with the class:</p> <ul style="list-style-type: none"> • the care management programme in place to maintain the high quality of resources • the methods for monitoring the standard by which the greens are measured • how the residual products may be managed • the impact of current environmental issues on the maintenance of the greens. 	AC2a–c	CT2	SL	3	

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
11 Resource management for material development	<p>Learners must research and then report on a given material that is a product of the ELB industry. They should look into what these products may be used for.</p> <p>The class should draw on the previous week's discussion to ensure that the following points are covered in the report.</p> <ul style="list-style-type: none"> • The care management programme in place to maintain the high quality of resources • The methods for monitoring the standard by which the greens are measured • How the residual products may be managed 	AC2	CT2 IE1, 6	Use ICT F&S ICT DPC ICT	3	
12 Modelling	<p>Introduce the concepts of modelling, including line of best fit, regression analysis and correlation.</p> <p>Discuss the straight line time series models and their limitations.</p> <p>Discuss the concept of log and exponential graphs.</p> <p>Discuss the concept of deriving models from prior recorded data and the use of multi-function formulae.</p> <p>In groups, give several partial sets of data and ask learners to model the remainder of the time series. Afterwards, compare the results the model produces with the observed results.</p> <p>Each group should produce a report explaining the rationale behind their models and how they predicted the observed results.</p>	AC3a	TW1, 2	SL W DPC ICT	3	

<p>13 Importance of maintaining quality management programmes</p>	<p>As a group, discuss the importance of maintaining a quality management programme and constantly revising it.</p> <p>View an old quality management programme for an ELB enterprise. In groups, learners should update the programme and then compare their revised programme with the company's new one.</p> <p>Conduct a class discussion on why it is important to continually develop products.</p> <p>Learners should be given a list of products and asked to suggest improvements that would benefit the company economically, environmentally and not be detrimental to society.</p>	<p>AC2a–c</p>	<p>CT5 IE5, 6</p>	<p>DPC ICT W</p>	<p>3</p>	
<p>14 Pollution testing</p>	<p>Discuss common pollutants, sources, causes and their effect.</p> <p>Discuss the spiral increase of pollutants when applied to a food web. Use case study of the Californian condor and DDT.</p> <p>Discuss: Are there acceptable levels of pollution?</p> <p>Discuss the means of testing for pollutants.</p> <p>Groups are required to look at prepared case studies and determine the cause and effects. Outline what testing protocols would have been appropriate to alert management to the problem before it had become critical.</p>	<p>AC3a</p>	<p>IE3 CT3, 4</p>	<p>SL W</p>	<p>3</p>	

15 Site analysis, predictions and objective planning	Given a report of a site and a proposed usage for the site, the learners are to produce a set of predictions as to the outcomes over a 5, 10 and 15-year period. This is to be incorporated into a report on the viability of the proposal when implemented on this site. It should detail what issues will require monitoring and management, and what intervention would be needed.	AC3a, b	CT5, 6	W DPC ICT	3	
16 Strategy planning	Discuss the roles and interrelatedness of vision, aims and objectives in a strategy. Discuss the need for measurable outcomes to evaluate the effectiveness of strategic planning and how these will be related to the aims and objectives. Introduce the concept of critical path in planning for a strategy. Working in groups, apply the concepts of strategic planning to the previous week's site and proposed usage.	AC3b, c	TW1	SL W	3	
17 Review effectiveness of resource management strategies	In groups, taking the reports from the previous two weeks, each group is to review the effectiveness of two other group strategies for management of resources and to produce a critique of the two reviews. The critique is to take the form of a PowerPoint presentation and the originating group is allowed to defend their strategy.	AC3d	TW1, 5	DPC ICT	3	
18 Assessment					3	
19 Assessment					3	
20 Assessment					3	