

Unit 38: Environmental Health

Unit code:	T/600/8996
QCF Level 3:	BTEC Nationals
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit aims to give learners an understanding of the potential impact of human beings on the environment, how this, in turn, can affect human health, and strategies that could be used to minimise this impact.

● Unit introduction

This unit gives learners opportunities to explore a wide range of ways in which human activities may influence the environment, and the potential effects on human health of factors resulting from this. Learners will also investigate strategies that have been developed to reduce the impact of human activities on the environment, including legislation.

This unit will be useful for learners planning to work in the health and social care sectors, as it will give them an understanding of the health risks in the local and global environment that could affect themselves and patients or users of their services. It will also be useful for learners aiming to study at a higher level.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand how humans can damage the environment
- 2 Understand the effects of environmental change on human health
- 3 Know the strategies that have been developed to reduce the impact of human activities on the environment.

Unit content

1 Understand how humans can damage the environment

Urbanisation and population density: overcrowding, poverty, transport systems, energy systems, water supply, pollution, eg vehicle emissions, waste accumulation

Intensification of agriculture: increased use of fertilisers/pesticides, genetic modification of crops, soil erosion, monoculture, pollution of waterways, destruction of wildlife habitats, loss of biodiversity

Pollution of environment: air, water, land, noise

Other effects on the environment: from human activities, eg nuclear power sources, increased nitrates in drinking water, carbon monoxide emissions

2 Understand the effects of environmental change on human health

Environmental change: change in land use, deforestation, desertification, grazing, different farming methods, genetic modification, the use of pesticides, sustainable development, pollution, ozone depletion

Effects of urbanisation: overcrowding, pollution, pest infestations, hygiene, disease, poverty

Effects on health: physical health, communicable diseases, genetic diseases, cancer, nutritional health; mental health

Range: individual, local, regional, national, international

3 Know the strategies that have been developed to reduce the impact of human activities on the environment

International: role of, eg United Nations, Rio Declaration on Environment and Development 1992; sustainable development; World Health Organization; UK international development policy

Pressure groups: role of, eg Greenpeace, Friends of the Earth

National: role of, eg DEFRA

Regional: role of, eg Regional Development Agencies

Local: strategies, eg Agenda 21, recycling programmes, dog fouling bins/penalties, waste collection and disposal, 'park and ride' facilities, renewable energy schemes

Environmental health officers: role of, eg inspection of food outlets, inspection of factories

Treatments: typical treatments, eg water, sewage, air

Organic farming: use of, eg natural fertilisers, biological pest control, mechanical pest control

Protection of the individual: in, eg home, workplace, public places; role of, eg Environment Agency, role of public health officials; Hygiene Regulations 1995; Air Quality – National Air Quality Strategy; Waste: Section 33 Environmental Protection Act

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 explain how human activity can damage the environment [RL5; IE1; CT4]		D1 evaluate the impact of organisations in improving human health
P2 explain the effects of a damaged environment on human health [RL5; IE1]	M1 assess the relationship between damage to the environment and human health	
P3 describe strategies that have been developed to reduce the impact of human activity on the environment [IE1,3; EP6]	M2 assess the effectiveness of organisations in improving the environment	
P4 describe the role of pressure groups in achieving desired standards in the reduction of the harmful effects of one human activity [IE1; IE3; EP2; EP6]		
P5 describe the role of legislation and regulations in reducing the impact of environmental change on human health. [IE1; IE3; CT2; CT4]	M3 explain the impact of legislation and policies in reducing the impact of one human activity on the environment.	D2 compare the effectiveness of organisational approaches to a national or international environmental health issues.

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills which are embedded in the assessment of this unit. By achieving the criteria, learners will have demonstrated effective application of the referenced elements of the skills.

Key	IE – independent enquirers CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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Essential guidance for tutors

Delivery

This unit has been designed to give learners a good understanding of how human activities can damage the environment, and how factors resulting from this can, in turn, affect human health. It also provides an insight into the role of legislation and the work of professionals in this field.

Initially, learners could undertake a local environmental audit as a means of introducing the unit and raising awareness of specific and general issues. They will also benefit from visits to local water treatment plants, refuse collection centres, recycling plants or sewage plants. Guest speakers could be invited in, for example environmental health officers or representatives from local pressure groups. The use of videos/DVDs is also recommended.

Small-group activities could be used as the basis of investigations into the potential effects of a range of human activities on the environment, and the potential effects of the resulting environmental changes on human health. Researching these topics will enable learners to expand their research skills through using the internet, approaching relevant organisations, and primary research where appropriate.

Subsequent presentations to other members of the group will enhance learning by facilitating in-depth coverage of a number of different topics. This will help tutors to ensure that a good range of environmental issues is covered.

Learners then need to apply their research skills to obtain information on how the impact of human activities on the environment is being addressed. This will include consideration of any major legislation, and the context of the global environment. International, national, regional, local and individual contributions need to be considered.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Unit introduction.
Assessment introduction: tutor to introduce learners to the idea of a holistic assignment; learners can investigate one environmental issue that interests them to meet the assessment criteria.
Learning outcome 1 Tutor input: human impact on the environment. Discussion: what are the effects of humans on the environment? Discuss effects of urbanisation, agriculture, pollution etc. Use of DVDs to stimulate discussion. Learner/tutor meetings: tutors to discuss with learners individually the impact on the environment that they would like to investigate. Tutor input: environmental audits. Group activity: groups to undertake an environmental audit around the local area, identifying how human impact has damaged the environment. Learner research: undertake research on further effects human have on the environment.
Assignment 1: Human impact on the environment (P1)
Learning outcome 2 Tutor input: impact of environmental change on human health. Group activity: groups to investigate the effects of particular areas of environmental change on human health; ensure that local, regional, national and international changes are investigated. Presentations: groups to present their findings to peers. Guest speaker: environmental health officer or similar to discuss the effect of environmental change on human health and lead into learning outcome 3.
Assignment 2: Environmental impact on human health (P2, M1)
Learning outcome 3 Tutor input: outlining various types of strategies to reduce the impact of human activities on the environment, to include local, national and international. Guest speaker/visit: for example from pressure groups to explain their strategies and the impact of these. Tutor input: outlining legislation that relates to environmental management. Guest speaker: from an organisation or representative at a local level, for example an organic farmer or local council to discuss how they are having an impact locally. Learner research: undertake research into national and international strategies (use of the internet would be particularly useful to look into DEFRA, United Nations, World Health Organization etc).
Assignment 3: Organisational strategies to improve environmental change and human health (P3, P4, P5, M2, M3, D1, D2)
Unit review and assessment.

Assessment

Evidence for this unit could be submitted in a variety of formats, for example pieces of writing, project work, records of presentations and case studies. The unit could be assessed by means of one holistic assignment, for example learners could use an investigation into one environmental issue as the basis of evidence for most of the assessment criteria.

Learners can choose from a broad range of issues, but they should be encouraged to select a topic of particular interest to them. They need to discuss their choice of topic with the tutor in order to ensure the issue chosen has the scope available for grading purposes. Tutors may decide to request plans from learners before negotiating a topic.

For P1, learners need to explain clearly the different ways in which human activity can damage the environment, giving examples. To achieve P2, learners must explain how environmental change can affect human health. These two pass criteria are then linked for M1, which requires learners to assess the relationship between damage to the environment and human health. They should use examples to support their assessment and provide clear conclusions.

For P3, learners need to describe the different strategies used by national, regional and local organisations to minimise the impact of human activity and, for M2, assess how effective these have been, again using examples.

For P4, the role of organisations such as pressure groups is explored and learners need to show clear knowledge of the link between pressure group activity, the media attention generated and a reduction in the harmful human activity. To achieve P5, learners need to describe the role of legislation and regulations in monitoring and guiding the development of strategies to improve the environment. For M3, this needs to be expanded to explain how legislation and policies have helped to reduce the impact of human activity on the environment. For D2, learners should compare the various approaches different types of organisations take towards environmental health issues. The comparison should take into consideration international groups such as the United Nations as well as pressure groups such as Greenpeace.

Learners need to demonstrate a thorough understanding of the conflicts and tensions inherent in environmental issues in order to achieve the higher grades.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1	Human impact on the environment	You are working for the local authority in the environmental division. You have been asked to prepare a report which looks at the relationship between a particular area of environmental change and human health. You must also research the various organisations that help to reduce the impact of this particular area of human activity on the environment and how this in turn will improve human health.	Written report.
P2, M1	Environmental impact on human health		
P3, P4, P5, M2, M3, D1, D2	Organisational strategies to improve environmental change and human health		

Links to National Occupational Standards (NOS), other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Health and Social Care sector suite (see *Appendix A*) and has links with units from other qualifications in that suite. See *Appendix E* for NOS links and *Appendix G* for a mapping of the NHS Knowledge and Skills Framework against particular units in this qualification.

Essential resources

The following resources are essential for delivery of this unit:

- an appropriately qualified tutor
- library resources with key texts and other reference materials.

Employer engagement and vocational contexts

The unit will be greatly enhanced if delivered within a vocational context. Tutors are encouraged to organise workplace visits or guest speakers from relevant and accessible organisations. The following resources are considered to be highly valuable:

- local and national media reports
- local environmental health department information
- official reports and other government documents from HMSO
- guest speakers/visits
- publications from the Health and Safety Executive
- publications from the Department for Environment, Food and Rural Affairs (DEFRA)
- publications from the World Health Organization
- audio and visual records.

Indicative reading for learners

Textbooks

Bruges J – *The Little Earth Book* (Disinformation Company, 2004) ISBN 9780972952927

Smith A and Baird N – *Save Cash and Save the Planet* (Collins, 2005) ISBN 9780007194209

Stretch B and Whitehouse M – *BTEC Level 3 Nationals in Health and Social Care Student Book 1* (Pearson, 2010) ISBN 9781846907663

Stretch B and Whitehouse M – *BTEC Level 3 Nationals in Health and Social Care Student Book 2* (Pearson, 2010) ISBN 9781846907470

Journals

Earthwatch

New Scientist

Websites

www.aeat.co.uk/netcen/airqual/forecast.html	National Air Quality Information Archive Bulletin System
www.cieh.org.uk	Chartered Institute of Environmental Health
www.climateactionnetwork.org	Climate Action Network
www.dti.gov.uk	Department for Business, Innovation and Skills
www.defra.gov.uk	Department for the Environment, Food and Rural Affairs
www.dft.gov.uk	Department for Transport
www.environment-agency.gov.uk	Environment Agency
www.europarl.eu.int	The European Parliament
www.foe.co.uk	Friends of the Earth
www.greenpeace.org	Greenpeace UK
www.hse.gov.uk	Health and Safety Executive
www.nasca.org.uk	National Society for Clean Air
www.pesticides.gov.uk	The Pesticides Safety Directorate

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	[IE1] identifying questions to answer about the relationship between environmental damage and human health [IE3] exploring issues from different perspectives when researching strategies to reduce the impact of human activity on the environment and the organisations involved in such work
Creative thinkers	[CT2] posing questions to guest speakers to extend their thinking related to the role of legislation and regulations in reducing the impact of environmental change on human health [CT4] questioning own and others' thinking when discussing human impact on the environment
Reflective learners	[RL5] evaluating experiences about the relationship between environmental damage and human health
Effective participators	[EP2] presenting a persuasive case for the role of pressure groups in achieving a reduction of the harmful effects of human activity on the environment [EP6] acting as an advocate for beliefs that may differ from their own when researching and presenting information on organisations involved in environmental work.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	selecting a variety of sources to be included in the written report on the reduction of the impact of human activity on the environment
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	searching for ICT-based information using various sources
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	entering and developing information for assignment work
Bring together information to suit content and purpose	bringing together relevant information to suit the task
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	contributing to a group discussion on the damage human activity can do to the environment listening appropriately and posing relevant questions to guest speakers
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading and synthesising information about strategies to reduce the impact of human activity on the environment, and forming opinions for assignment work
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing an extended report, making notes from class discussions, clearly communicating thoughts, ideas and opinions.