



City & Guilds Level 2 Certificate in Sustainability and the Green Environment (7617-12)

Version 1.0 (February 2023)

Qualification Handbook

Qualification at a glance

Subject area	Land (Environmental Conservation)
City & Guilds number	7617-12
Age group approved	Pre16, 16+
Entry requirements	None
Assessment	Assignment
Grading	Pass / Fail
Approvals	Fast track approval
Support materials	Qualification handbook, sample assessments
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	City & Guilds qualification number	Regulatory reference number	GLH	TQT
City & Guilds Level 2 Certificate in Sustainability and the Green Environment	7617-12	610/1652/4	120	132

Version and date	Change detail	Section
1.0 February 2023	Initial version	All

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1 Introduction

This document tells you what you need to do to deliver the qualification:

Area	Description
Who is the qualification for?	<p>This qualification is aimed at learners who wish to understand sustainable working practices for a specific job role, future job role and ongoing training. It is especially useful for those who want to work within sustainability or who have been given responsibility for sustainability within their organisations. This qualification is designed for use within land-based industries (environmental conservation).</p> <p>This qualification is also suitable for those who desire to develop or improve their knowledge and understanding of Sustainability and the Green Environment in a range of industries and sectors. It would be particularly useful for progressing into the Sustainability Officer/Co-ordinator/Advisor role and those with job roles which have responsibilities for sustainability reviews and planning within businesses and organisations.</p>
What does the qualification cover?	<p>This qualification is for learners to develop knowledge and understanding of the terms environment, sustainability, climate change and net zero as they relate to a green future.</p> <p>Learners will explore the definitions, categories, components and human and non-human impacts of the environment.</p> <p>Learners will explore the definitions, pillars, actors and green technologies relating to sustainability.</p> <p>They will explore the topics of greenhouse gases, sources, targets and their effects on climate change.</p> <p>Learners will explore the carbon context, carbon footprint as well as national and international policy on net zero.</p>
What opportunities for progression are there?	<p>This qualification is designed to provide learners with the knowledge and understanding of sustainability, environment, climate change and net zero to enable them to move into job roles such as Sustainability Advisor/Co-ordinator. Learner may also progress onto a level 3 programme and/or a sustainability manager role.</p> <p>It can be a starting point for a career progression where learners can further develop into professional roles as they relate to the green economy.</p> <p>Learners who achieve this qualification could progress to the:</p>

Area	Description
	<p>Level 3 Award in Business Management for the Environment and Land-based Sector; Level 3 Diploma in Work Based Environmental Conservation.</p>
<p>Who did we develop the qualification with?</p>	<p>This qualification has been developed in collaboration with industry specialists and established lecturers and assessors.</p>
<p>Is it part of an apprenticeship framework or initiative?</p>	<p>The City & Guilds Level 2 Certificate in Sustainability and the Green Environment is not an apprenticeship, but it could be taken as a value added off the job training qualification to enable apprentices to learn about the evolving Sustainability and the Green Environment industry. It can be embedded into the apprentices learning journey to support the relevance to the current industry climate. This Certificate can be delivered as a standalone qualification or used in an induction programme or integrated within a longer programme of study in a vocational area.</p>

Structure

To achieve the **City & Guilds Level 2 Certificate in Sustainability and the Green Environment**, learners must achieve **four** mandatory units.

City & Guilds unit number	Unit title	GLH
Mandatory units:		
Learners must achieve four mandatory units.		
202	Sustainability	30
203	Environment	30
204	Climate change	30
205	Net zero	30

Total Qualification Time (TQT)

Total Qualification Time (TQT) is the number of notional hours which represents an estimate of the total amount of time that could reasonably be expected for a learner to demonstrate the achievement of the level of attainment necessary for the award of a qualification.

TQT is comprised of the following two elements:

- 1) The number of hours that an awarding organisation has assigned to a qualification for Guided Learning, and
- 2) An estimate of the number of hours a learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by - but, unlike Guided Learning, not under the immediate guidance or supervision of - a lecturer, supervisor, tutor or other appropriate provider of education or training.

Title and level	GLH	TQT
City & Guilds Level 2 Certificate in Sustainability and the Green Environment	120	132

2 Centre requirements

Approval

Fast track approval

If your centre is an approved centre then you can apply for fast track approval for 7617-12 using the fast track approval form, available from the City & Guilds website.

Centres should use the fast track form if:

- there have been no changes to the way the qualifications are delivered, and
- they meet all of the approval criteria in the fast track form guidance notes.

Fast track approval is available for 12 months from the launch of the qualification. After 12 months, centres will have to go through the standard Qualification Approval Process. The centre is responsible for checking that fast track approval is still current at the time of application.

Please refer to the document **Quality Assurance Standards: Centre Approval Process** for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Resource requirements

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area(s) for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Continuing Professional Development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and quality assurance, and that it takes account of any national or legislative developments.

Quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Our quality assurance process includes a review of the centres' own internal procedures for monitoring quality. This will be done through our centre

and qualification approval process and on-going EQA monitoring process. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance. For more detail on this visit the [Quality Assurance Standards](#) documents on the City & Guilds website.

Standards and rigorous quality assurance are maintained by the use of:

- Internal quality assurance
- City & Guilds external quality assurance.

In order to carry out the quality assurance role, Internal Quality Assurers must

- have appropriate teaching and vocational knowledge and expertise
- have experience in quality management/internal quality assurance
- hold or be working towards an appropriate teaching/training/assessing qualification
- be familiar with the occupation and technical content covered within the qualification.

External quality assurance for the qualification will be provided by City & Guilds EQA process. EQAs are appointed by City & Guilds to approve centres, and to monitor the assessment and internal quality assurance carried out by centres. External quality assurance is carried out to ensure that assessment is valid and reliable, and that there is good assessment practice in centres.

The role of the EQA is to:

- provide advice and support to centre staff
- ensure the quality and consistency of assessments within and between centres by the use of systematic sampling
- provide feedback to centres and to City & Guilds.

Learner entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that learners have the potential and opportunity to gain the qualification successfully.

Age restrictions

This qualification is approved for learners aged 14-16/16 or above.

Access to assessment and special consideration

For information on how to apply for access arrangements please refer to ***How and when to apply for access arrangements and special consideration (cityandguilds.com)***

3 Delivering the qualification

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific training needs
- support and guidance they may need when working towards their qualification
- any units they have already completed, or credit they have accumulated which is relevant to the qualification
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the learner fully understands the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Support materials

The following resources are available for this qualification:

Description	How to access
Qualification handbook	www.cityandguilds.com
Sample assessments	www.cityandguilds.com

4 Assessment

Assessment of the qualification

Candidates must:

- successfully complete one assignment for each mandatory unit.

Assessment Types			
Unit	Title	Assessment method	Where to obtain assessment materials
202	Sustainability	Externally set, internally marked Assignment	www.cityandguilds.com
203	Environment	Externally set, internally marked Assignment	www.cityandguilds.com
204	Climate change	Externally set, internally marked Assignment	www.cityandguilds.com
205	Net Zero	Externally set, internally marked Assignment	www.cityandguilds.com

Assessment strategy

City & Guilds has written the following assessments to use with this qualification:

- live assignments which can be downloaded from the City & Guilds website
- sample assignments which can be downloaded from the City & Guilds website.

Time constraints

The following must be applied to the assessment of this qualification:

- the assessment must be completed within the learner's period of registration.

Written Assessments

All written assessments should be conducted according to the Joint Council for Qualifications (JCQ) Instructions for Conducting Examinations (ICE). This document contains detailed information on the administration of examinations before, during and after.

Test specifications

These boundaries may be subject to slight variation to ensure fairness should any variations in the difficulty of the test be identified.

The way the knowledge is covered by each assignment question paper is laid out in the table below:

Assessment title: Sustainability

Assessment type: Assignment

Assessment conditions: Open book

Duration: 6 hours

Graded: Pass/Fail

Pass Mark: The pass mark for this assessment is set at 60%.

These boundaries may be subject to slight variation to ensure fairness should any variations in the difficulty of the test be identified.

Test:	Duration: 6 hours		
Unit	Outcome	Number of marks	Percentage %
202	LO1 Understand the fundamentals of sustainability	30	30
	LO2 Understand the influence of legislation and government initiatives	35	35
	LO3 Understand green technologies to support sustainability goals	35	35
Total		100	100%

Assessment title: Environment

Assessment type: Assignment

Assessment conditions: Open book

Duration: 6 hours

Graded: Pass/Fail

Pass Mark: The pass mark for this examination is set at 60%.

These boundaries may be subject to slight variation to ensure fairness should any variations in the difficulty of the test be identified.

Test:	Duration: 6 hours		
Unit	Outcome	Number of marks	Percentage %
203	LO1 Understand the factors which impact the environment	34	34
	LO2 Understand the components of the environment and how they are protected	42	42
	LO3 Understand the environmental impacts on the planet locally, nationally and globally	24	24
Total		100	100%

Assessment title: Climate change

Assessment type: Assignment

Assessment conditions: Open book

Duration: 6 hours

Graded: Pass/Fail

Pass Mark: The pass mark for this examination is set at 60%.

These boundaries may be subject to slight variation to ensure fairness should any variations in the difficulty of the test be identified.

Test:	Duration: 6 hours		
Unit	Outcome	Number of marks	Percentage %
204	LO1 Understand the causes of global climate change	28	28
	LO2 Understand the impacts of climate change on the environment	24	24
	LO3 Understand the sources of greenhouse gas emissions	48	48
Total		100	100%

Assessment title: Net zero

Assessment type: Assignment

Assessment conditions: Open book

Duration: 6 hours

Graded: Pass/Fail

Pass Mark: The pass mark for this examination is set at 60%.

These boundaries may be subject to slight variation to ensure fairness should any variations in the difficulty of the test be identified.

Test:	Duration: 6 hours		
Unit	Outcome	Number of marks	Percentage %
205	LO1 Understand how emissions can be controlled and reduced	20	20
	LO2 Understand net zero carbon emissions	21	21
	LO3 Understand net zero policies and targets	26	26
	LO4 Understand carbon footprinting	33	33
Total		100	100%

5 Grading

Grading of qualification

The single assessment is to be graded Pass/Fail and it will be the overall qualification grade.

For full details on how to grade the qualification, refer to the Assessment Pack available on the qualification page of www.cityandguilds.com.

City & Guilds will provide the following assessment materials:

- assignments and answer packs, including different versions

The assessment materials are password protected and can be found on the City & Guilds website:

<https://www.cityandguilds.com/qualifications-and-apprenticeships/land-based-services/environment-countryside-and-conservation/7617-level-2-award-certificate-in-sustainability-and-the-green-environment#tab=information>

The password is available to registered centres on the Walled Garden.

6 Units

Structure of the units

These units each have the following:

- City & Guilds reference number
- Title
- Level
- Guided learning hours (GLH)
- Assessment Type
- Aim
- Learning outcomes, which are comprised of a number of assessment criteria
- Range statements.

Centres must deliver the full breadth of the range. Specialist equipment or commodities may not be available to all centres, so centres should ensure that their delivery covers their use.

Guidance for delivery of the units

This qualification is comprised of four **units**. A unit describes what is expected of a competent person in particular aspects of his/her job.

Each **unit** is divided into **learning outcomes** which describe in further detail the skills and knowledge that a learner should possess.

Each **learning outcome** has a set of **assessment criteria** (knowledge and understanding) which specify the desired criteria that must be satisfied before an individual can be said to have performed to the agreed standard.

Range statements define the breadth or scope of a learning outcome and its assessment criteria by setting out the various circumstances in which they are to be applied.

Unit 202

Sustainability

Level:	2
GLH:	30
Assessment type:	Assignment
Aim:	<p>The purpose of this unit is for learners to develop an understanding of sustainability as it relates to a green skills future.</p> <p>Learners will explore sustainability generally as well as applying their understanding to a specific industry sector.</p>

Learning outcome

The learner will:

LO1 Understand the fundamentals of sustainability

Assessment criteria

The learner can:

AC1.1 explain the **foundations** of sustainability

AC1.2 identify **resource use** in society

AC1.3 identify ways to **improve sustainability**

AC1.4 describe **economic and social benefits** of sustainability

Range

AC1.1 foundations

- resource use: current, future, resource damage to date
- conservation of the environment
- conservation of biodiversity of the planet
- conservation of human resources
- population control and management
- requirement of climate change targets

AC1.2 resource use

- non renewables: coal, natural gas, and oil
- renewables: solar energy, wind energy, tidal energy, hydropower, biomass, geothermal
- supply chain challenges: sourcing locally, availability of supplies, skills shortages, logistics, energy supply

AC1.3 **improve sustainability**

- pollution: water, air, land
- waste: landfills, material usage, safe disposal
- reducing carbon emissions: fossil fuels, manufacturing and transportation

AC1.4 **economic and social benefits**

- social benefits: health, physical and mental wellbeing, security and safety: reduced crime rates and vandalism, community development
- economic benefits: town regeneration and improved facilities: healthcare, built environment, leisure, and tourism, technological innovations, employment, training, upskilling, new career opportunities

Learning outcome

The learner will:

LO2 Understand the influence of legislation and government initiatives

Assessment criteria

The learner can:

AC2.1 identify **legislation** supporting sustainability and the green environment

AC2.2 identify **sustainable development goals** which can be used to support sustainability on a local level

AC2.3 describe how legislation and policies can **improve sustainability** for the future

AC2.4 describe how legislation and policies support **sustainability in a specific industry sector**

Range

AC2.1 **legislation**

- Government legislation: Environment Act (2021)/Hazard Waste Regulations (2005/2016 amend)/Environment Act (1995)/ Next Generation Act (Wales)/Environment Protection Act (1990)/The Waste Electrical and Electronic Equipment Directive (WEEE) (2007)/Environmental Permitting Regulations (2010)/Climate Change Act (2008)/Climate Change and Sustainable Energy Act (2006)

AC2.2 **sustainable development goals**

- setting standards globally: the Paris Agreement, Conference of parties (COP), the 17 sustainable development goals, forestry commission, United Nations
- setting local standards: council policy
- personal responsibility: locally, nationally and globally

AC2.3 **improve sustainability**

- energy efficiency
- clean air, clean water, conservation of land and biodiversity, prevent deforestation
- less carbon emission, carbon neutrality
- climate change: global temperature trends
- duty and responsibilities

AC2.4 **sustainability in a specific industry sector**

- sectors: construction, health, care, education, manufacturing, industry, finance, hospitality, leisure, retail, digital or communication industries, hair and beauty, sports
 - everyday life: standard of living, lifestyle choices
-

Learning outcome

The learner will:

LO3 Understand how green technologies to support sustainability goals

Assessment criteria

The learner can:

AC3.1 identify **emerging green technologies**

AC3.2 describe the **impact of green technology** through sustainable practice

AC3.3 explain the **methods** which could be used to achieve sustainability

AC3.4 explain how **green technologies and sustainable practice** can improve a specific industry sector

Range

AC3.1 **emerging green technologies**

- renewable technologies: solar, tidal, wind, hydrogen, geothermal, air/water/ground source heat, smart energy meters and composting
- sustainable/green materials: bioplastics, cross laminated timber (CLT), carbon fibre, biodiverse green roofs, biofibres, sheep's wool insulation, materials with low embodied energy

AC3.2 **impact of green technology**

- improved management of energy usage
- changes in behaviour: business, community, personal
- training and career opportunities
- financial: opportunity to invest and energy savings
- improved quality of goods, services, and facilities eg electric cars, energy efficient washing machines

AC3.3 **methods**

- reuse of materials, upcycling
- reduce: energy usage, carbon emission, waste including recycling
- upgrading property (industrial, commercial, domestic)

AC3.4 **green technologies and sustainable practice**

overview of carbon emissions

- methods of improving energy efficiency
 - potential for renewable energy use
 - impact of improvements
-

Unit 203

Environment

Level:	2
GLH:	30
Assessment type:	Assignment
Aim:	The purpose of this unit is for learners to develop an understanding of the key features of the environment and methods to support a green skills future. Learners will explore the environment generally as well as apply understanding to a specific industry sector.

Learning outcome

The learner will:

LO1 Understand the factors which impact the environment

Assessment criteria

The learner can:

AC1.1 define the **fundamental aspects** of the natural environment

AC1.2 identify **environmental challenges** to the natural environment

AC1.3 identify **organisations and policies** in place for protection of the environment

AC1.4 describe the **impact** of the schemes, policies, and legislation on the environment

Range

AC1.1 fundamental aspects

- land: arid regions, flora and fauna
- sea: marine life, marine vegetation, glaciers
- air: air quality, ozone depletion

AC1.2 environmental challenges

- loss of habitats: land usage
- pollution from industrial processes
- pollution from human intervention
- population growth: increased demand for food, water, housing, energy, healthcare, transportation

AC1.3 organisations and policies

- international: United Nations, European Union, Conference of Parties (COP), Greenpeace
- **governmental and non-governmental organisations:** Royal Society of Wildlife Trusts, Friend of the Earth, Keep Britain Tidy, The British Ecology Society, Green Alliance, SEPA, DEFRA, Environmental Agency, NIEA, Natural Resources Wales
- legislation and policies: sustainable development goals, environmental land management schemes, sustainable farming incentive, local nature and land recovery

AC1.4 impact

- global participation
- meeting demands: land use, farming, supplies of goods and services
- conservation of species
- affordable energy, reduced bills
- recycling, reduced waste
- accountability: leaders and citizens, adhering to regulations

Learning outcome

The learner will:

LO2 Understand the components of the environment and how they are protected

Assessment criteria

The learner can:

AC2.1 describe the impact of the **Environmental Protection Acts, symbols and signage**

AC2.2 explain how **data supports** the protection of the environment

AC2.3 describe the **benefits** of protection for the environment

AC2.4 describe how **industry sectors** can impact the local environment

Range

AC2.1 Environmental Protection Acts, symbols and signage

- Environment Agency, Environmental Act, Pollution Act, Wildlife and Countryside Act, Climate Change Act, Planning (Listed Buildings and Conservation Areas) Act, Wildlife and Countryside Act
- hazard symbols, recycling and conservation symbols

AC2.2 data supports

- setting standards: development of legislation
- quality control: materials, buildings standards, testing
- accountability: placing responsibility on leaders, businesses, human race
- future growth which is sustainable and supports the demand of human needs

AC2.3 benefits

- conservation of land, habitats and wildlife
- health and hygiene: availability of clean water, availability of food, efficient waste systems
- reuse, recycle, reduce and replace
- community, business and personal

AC2.4 **industry sector**

- licenses: environmental permits and other permissions
- education, training, employment and upskilling
- influence of professional and trade bodies
- financial incentives: grants, subsidies
- local council policies and procedures
- development of business policies and procedures

Learning outcome

The learner will:

LO3 Understand local, national and global impacts on the environment

Assessment criteria

The learner can:

AC3.1 identify the potential **human impacts** on the environment

AC3.2 describe the **long term benefits** of protecting the environment

AC3.3 explain how **personal responsibility** can improve the future of the environment

Range

AC3.1 **human impacts**

- excessive consumption: food waste, plastics, energy usage, fast fashion
- resistance to change
- changing working practice: use of premises, working from home
- transportation usage: car share, reliance on motor vehicles, flights, carbon footprint

AC3.2 **long term benefits**

- improved wellbeing, mindsets, lifestyles
- community growth and development: preservation of local heritage for future generations, improved local environments
- conservation of wildlife and biodiversity, cleaner air, less flooding, less forest fires and other climate change implications
- new employment opportunities and career roles
- affordable renewable energy: reduced energy bills
- agriculture and farming: meet the demands of the growing population

AC3.3 **personal responsibility**

- personal action/ be a role model

- training and continued professional development
- sustainable practice at home or in the workplace
- household or business improvement plans

Unit 204

Climate change

Level:	2
GLH:	30
Assessment type:	Assignment
Aim:	<p>The purpose of this unit is for learners to develop knowledge and understanding of climate change as it relates to a green skills future.</p> <p>Learners will explore greenhouse gases, sources, targets and effects on climate change generally as well as applying their understanding to their sector of study.</p>

Learning outcome

The learner will:

LO1 Understand the potential causes of global climate change

Assessment criteria

The learner can:

AC1.1 describe the **greenhouse effect**

AC1.2 identify the main **greenhouse gases**

AC1.3 explain the concept of **carbon equivalence**

AC1.4 describe the potential **impacts** of the greenhouse effect and greenhouse gas emissions on global warming and climate change

Range

AC1.1 **greenhouse effect**

- solar energy
- atmosphere
- infra-red radiation trap
- warming

AC1.2 **greenhouse gases**

- carbon dioxide
- methane
- nitrous oxide
- water vapour
- ozone

AC1.3 carbon equivalence

- carbon equivalence usage
- carbon dioxide (single unit)
- methane and nitrous oxide

AC1.4 impact

- greenhouse effect on global warming and cooling
- greenhouse gases on the greenhouse effect
- global warming changes the earth's climate

Learning outcome

The learner will:

LO2 Understand the impacts of climate change on the environment

Assessment criteria

The learner can:

AC2.1 describe the **primary impacts** of global warming

AC2.2 describe the impacts of global warming on **natural environments**

AC2.3 describe the impacts of global warming on **semi-natural environments**

AC2.4 describe the impacts of global warming on **man-made environments**

AC2.5 define the term **climate emergency**

Range

AC2.1 primary impacts

- rising sea levels
- melting glaciers
- melting ice caps
- drought
- desertification
- flooding
- extreme weather events

AC2.2 impacts on natural environments

- Arctic/Antarctic – melting ice
- natural forests (tropical and temperate) – forest fires
- steppe environments – loss of species
- tundra environments – loss of species
- aquatic environments (ocean and fresh water) – migration of species

AC2.3 impacts on semi-natural environments

- farmed environment (agriculture) – changes to cropping
- managed woodland and forest – fires
- heathland and moorland – loss of habitat
- reservoirs – lack of water

AC2.4 **impacts on man-made environments**

- cities – high/low temperatures
- towns and villages – population change
- road and rail infrastructure – material usage
- municipal infrastructure (eg sewage management) – capacity

AC2.5 **climate emergency**

- +1.5 degrees Celsius
 - global average temperature rise
 - feedback loops (eg fires and warming oceans)
consequences
-

Learning outcome

The learner will:

LO3 Understand the sources of greenhouse gas emissions

Assessment criteria

The learner can:

AC3.1 describe the **natural sources** of greenhouse gas emissions

AC3.2 describe the **man-made sources** of greenhouse gas emissions

AC3.3 describe the **global and UK** greenhouse gas emissions

AC3.4 describe the **sources** of UK greenhouse gas emissions for the sector

Range

AC3.1 **natural sources**

- volcanoes
- forest fires
- oceans
- fresh water bodies
- plant respiration
- soil microbes respiration
- animal respiration (including humans)

AC3.2 **man-made sources**

- burning fossil fuels for energy
- use of fossil fuels in industrial processes
- agriculture (eg methane from livestock)
- land-use change (eg peatland to grassland)

AC3.3 **global and UK**

- international emissions
 - UK emissions by devolved nations (Scotland, England, Wales and Northern Ireland)
 - UK emissions by sector
-

AC3.4 sources

- types of emissions (carbon dioxide, methane, nitrous oxide)
- source of emissions (eg energy use, product use, personnel, maintenance and shut down)
- footprint of sectors : construction, health, care, education, manufacturing, industry, finance, hospitality, leisure, retail, digital or communication industries, hair and beauty, sports

Unit 205

Net zero

Level:	2
GLH:	30
Assessment type:	Assignment
Aim:	<p>The purpose of this unit is for learners to develop an understanding of the net zero carbon emissions target and how it relates to a green skills future.</p> <p>They will explore greenhouse gas emission control and reduction, carbon footprinting and the policy drivers for change, as well as applying their understanding to their sector of study.</p>

Learning outcome

The learner will:

LO1 Understand how emissions can be controlled and reduced

Assessment criteria

The learner can:

AC1.1 explain **carbon use efficiency** and its role in emissions control

AC1.2 explain **renewable energy production** and its role in emissions control

AC1.3 explain **carbon capture (sequestration)** and its role in emissions control

AC1.4 describe the approaches to emissions control in **sectors**

Range

AC1.1 **carbon use efficiency**

- efficiency of process (eg energy use, manufacturing, personnel)
- approaches to efficiency improvement (less carbon and/or more output)

AC1.2 **renewable energy production**

- solar
- hydro
- tidal
- hydrogen
- wind
- anaerobic digestion
- carbon lifecycle analysis for renewable energy use

AC1.3 carbon capture (sequestration)

- trees (woodland and forest)
- hedgerows and scrubland (heathland)
- agricultural soils
- peatland
- oceans
- innovative approaches to carbon capture

AC1.4 sectors

- overview of carbon emissions in sectors (construction, health, care, education, manufacturing, industry, finance, hospitality, leisure, retail, digital or communication industries, hair and beauty, sports)
- improving carbon use efficiency
- potential for renewable energy use
- carbon capture

Learning outcome

The learner will:

LO2 Understand net zero carbon emissions

Assessment criteria

The learner can:

AC2.1 define the term **net zero**

AC2.2 explain the potential impact of net zero in different contexts

AC2.3 describe the **history** of carbon emissions

Range

AC2.1 net zero

- definition of net zero
- net zero as it relates to the individual
- net zero as it relates to a business
- net zero as it relates to a specific sector
- net zero as it relates to a specific country
- net zero within a global context

AC2.2 impact

- measured emissions
- reported emissions by sector
- reported emissions by government
- reported emissions to IPCC

AC2.3 history

- emissions over thousands of years (global warming and global cooling phases)
- pre-industrial carbon emissions

- impact of the industrial revolution and growth in emissions

Learning outcome

The learner will:

LO3 Understand net zero policies and targets

Assessment criteria

The learner can:

AC3.1 identify net zero policies and targets of **international organisations**

AC3.2 identify **national** net zero policies and targets

AC3.3 identify **organisational** net zero policies and targets

Range

AC3.1 **international organisations**

- United Nations (UN) – function and process
- Intergovernmental Panel on Climate Change (IPPC) – function and process
- the Conference of the Parties (COP) – process and agreements

AC3.2 **national**

- the Climate Change Act (2008)
- the Climate Change and Sustainable Energy Act (2006)
- The Committee on Climate Change (CCC)
- the net zero 2050 target
- devolved and regional net zero policies

AC3.3 **organisational**

- organisational policy on net zero
 - organisational carbon control, reduction and net zero targets
 - sector net zero policies (eg trade associations)
-

Learning outcome

The learner will:

LO4 Understand carbon footprinting

Assessment criteria

The learner can:

AC4.1 describe what a **carbon footprint** is

AC4.2 understand the different **sources of carbon accounted** for in the footprint

AC4.3 describe how organisations and business calculate carbon footprint

Range

AC4.1 carbon footprint

- principles of carbon accounting
- communicating
- the future

AC4.2 sources of carbon accounted

- defining Scopes 1, 2 and 3
- accounting for Scopes 1, 2 and 3
- carbon capture
- carbon offsetting

AC4.3 calculate

- organisations and business (construction, health, care, education, manufacturing, industry, finance, hospitality, leisure, retail, digital or communication industries, hair and beauty, sports)
- sector footprint

Appendix 1 Relationships to other qualifications

Links to other qualifications

This qualification has connections to the:

- City & Guilds Level 2 Award in Sustainability and the Green Environment
- City & Guilds Level 2 Award in Retrofit
- City & Guilds Level 2 Certificate in Retrofit

Useful resources

- <https://www.gov.uk/government/publications/net-zero-strategy>
- <https://www.gov.uk/government/publications/environmental-and-sustainability-policy>
- <https://ukcop26.org/the-conference/cop26-outcomes/>
- <https://www.un.org/en/sustainable-development-goals>

Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centre Document Library** on **www.cityandguilds.com** or click on the links below:

Quality Assurance Standards: Centre Handbook

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on

- Centre quality assurance criteria and monitoring activities
- Administration and assessment systems
- Centre-facing support teams at City & Guilds / ILM
- Centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the Centre Contract.

Quality Assurance Standards: Centre Assessment

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements, or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre-assessments.

Access arrangements - When and how applications need to be made to City & Guilds provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **Centre Document Library** also contains useful information on such things as:

- Conducting examinations
- Registering learners
- Appeals and malpractice

Useful contacts

Please visit the Contact Us section of the City & Guilds website, **[Contact us](#)**

City & Guilds

For over 140 years we have worked with people, organisations and economies to help them identify and develop the skills they need to thrive. We understand the life changing link between skills development, social mobility, prosperity and success. Everything we do is focused on developing and delivering high-quality training, qualifications, assessments and credentials that lead to jobs and meet the changing needs of industry.

We partner with our customers to deliver work-based learning programmes that build competency to support better prospects for people, organisations and wider society. We create flexible learning pathways that support lifelong employability, because we believe that people deserve the opportunity to (re)train and (re)learn again and again – gaining new skills at every stage of life, regardless of where they start.

The City & Guilds community of brands includes Gen2, ILM, Intertrain, Kineo and The Oxford Group.

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