



City & Guilds Level 2 Certificate of Competence in Felling Small Trees up to 380mm (0039-21)

August 2022 Version 1.2

Qualification Handbook

Qualification at a glance

Industry area	Forestry and Arboriculture
City & Guilds number	0039-21
Age group	16-19, 19+
Entry requirements	<p>Candidates must have achieved City & Guilds 0039-20 Level 2 Certificate of Competence in Chainsaw Maintenance and Cross-Cutting (or equivalent version).</p> <p>Centres must ensure that any pre-requisites stated in the <i>What is this qualification about?</i> section are met.</p>
Assessment	<p>To gain this qualification, candidates must successfully achieve the following assessments:</p> <ul style="list-style-type: none"> One to one practical assessment with oral questioning by an NPTC City & Guilds approved assessor
Grading	Pass only
Approvals	<p>Full centre approval</p> <p>Qualification approval</p>
Support materials	Assessment Pack – Centre version
Registration and certification	Registration and certification of this qualification is through the Walled Garden and is subject to end dates.

Title and level	Size (GLH)	TQT	City & Guilds qualification number	Ofqual number
City & Guilds Level 2 Certificate of Competence in Felling Small Trees up to 380mm	24	28	0039-21	603/7354/4

Version and date	Change detail	Section
1.0	First version	
1.1 October 2021	AO name added to qualification title	Throughout
1.2 August 2022	<p>Formatting changes</p> <p>Updated logo</p> <p>Updated 'Sources of general information'</p>	<p>Throughout</p> <p>Front cover</p> <p>Appendix 1</p>

Contents

1	Introduction	4
	Purpose of this qualification?	4
	Qualification structure	5
2	Centre requirements	6
	Approval	6
	Physical resources	6
	Age restrictions	7
3	Administration	8
	External quality assurance	8
	Malpractice	8
	Access arrangements and special consideration	9
Unit 202	Felling small trees up to 380mm	10
	What is this unit about?	10
	Learning outcomes	10
	Scope of content	10
Appendix 1	Sources of general information	18

1 Introduction

Purpose of this qualification?

The following purpose is for the **City & Guilds Level 2 Certificate of Competence in Felling Small Trees up to 380mm (603/7354/4)**

Area	Description
OVERVIEW	
Who is this qualification for?	Individuals who operate chainsaws as part of their work in arboriculture, forestry or other industries. It will provide the individual with the knowledge, understanding and skills required to fell small trees up to 380mm safely and to industry standards in line with current legislation.
What does this qualification cover?	It covers risk assessment, emergency planning, legislation, industry best practice, environmental considerations, recognition of disease and decay, modification of felling methods, setting up supports, felling techniques and cuts, pre-start checks, site preparation, dealing with hung up trees, aid tools, branch removal, dealing with brash, cross-cutting timber to length, stacking timber and waste disposal.
WHAT COULD THIS QUALIFICATION LEAD TO?	
Will the qualification lead to employment, and if so, in which job role and at what level?	This qualification will support progression into employment where felling small trees is part of the role. Safe operational skills are key to efficient use, good working practice and preventing accidents, leading to business benefits in terms of less machinery damage and down time.
Why choose this qualification over similar qualifications?	This is a specialist qualification demonstrating the individual is able to fell small trees up to 380mm to a recognised level of competency.
Will the qualification lead to further learning?	Individuals who successfully complete this qualification could go on to increase their level of proficiency through consolidation practice within a working environment, or develop skills in safely operating chainsaws, e.g., Level 2 Certificate of Competence in Using a Chainsaw from a Rope and Harness
WHO SUPPORTS THIS QUALIFICATION?	
Employer/Higher Education Institutions	The Arboricultural Association Forestry Commission
Further information	Please refer to the City & Guilds NPTC website for more information on the assessment.

Qualification structure

For the **City & Guilds Level 2 Certificate of Competence in Felling Small Trees up to 380mm** learners must be trained and assessed in a minimum of one of the units listed below. The qualification will be endorsed to the context of the unit assessed:

Unit number	Unit title	GLH
Learners must achieve		
202	Felling small trees up to 380mm	24

Total Qualification Time

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 achieve and 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 which 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 of Competence in Chainsaw Maintenance and Cross-cutting	24	28

2 Centre requirements

Approval

New centres will need to gain centre approval. Existing City & Guilds centres who do not currently offer this qualification must go through the Qualification Approval (QAP) process. For centres currently offering City & Guilds Level 2 Award in Chainsaw Maintenance (0020-01) and Level 2 Award in Felling Small Trees up to 380mm (0020-04) there is a Fast Track method of approval. Please email qasupport@cityandguilds.com for further information on the approval process

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver this qualification and its assessments.

Assessment Guidance for the Assessor

Staff assessing these qualifications must be approved Certificate of Competence City & Guilds NPTC Assessors and must be independent **and cannot have been involved with the training of the Candidate**. This qualification can only be assessed by an Assessor who is suitably qualified and meets the requirements of the awarding body.

Certificate of Competence City & Guilds NPTC Assessors must meet the following requirements:

- show competence and provide evidence of industry expertise in the qualification/s they wish to assess
- hold the qualification as a candidate and have been technically evaluated as an Assessor
- be up to date with their verification and relevant first aid
- demonstrate continuing technically relevant CPD

Compliance with these requirements is a pre-requisite for Assessors remaining on the list of approved Assessors.

Verification is a process of monitoring assessment; it is an essential check to confirm that the assessment procedures are being carried out in the way City & Guilds has laid down. The overall aim of verification is to establish a system of quality assurance that is acceptable in

terms of both credibility and cost effectiveness and approved Assessors will be subject to a regular visit by the Verifier at a time when assessments are being undertaken.

A selection of assessment reports completed by the Assessor will be evaluated by a City & Guilds approved Quality Consultant.

Safe Practice

Appropriate PPE must be worn at all times

All equipment must be operated in such a way that the Candidate, Assessor, other persons, animals or other equipment are not endangered.

If these conditions are not observed this will result in the Candidate not meeting the required standard.

Validation of Equipment

Any item(s) equipment used for the assessment must comply with current legal requirements.

Additional information may be sought from the relevant manufacturer's instruction book, operator's manual, product label/database or any other Government/Government Agency publication.

Age restrictions

This qualification is approved for learners aged 16 – 19, 19+.

3 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make secure arrangements to receive, check and keep assessment material secure at all times, maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*. Alternatively please complete the form, JCQ/M1. Copies of this form can be found on the JCQ website: <http://www.jcq.org.uk>

Access arrangements and special consideration

We have taken note of the provisions of equalities legislation in developing and administering this specification.

We can make arrangements so that candidates with disabilities, special educational needs and temporary injuries can access the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments and Access arrangements - when and how applications need to be made to City & Guilds* for more information. Both are available on the City & Guilds website:

<http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*.

Language of examinations

City & Guilds has a responsibility to ensure that candidates can be assessed in the following languages only:

- English
- English in Northern Ireland
- English in Wales.

Level:	2
GLH	24

What is this unit about?

The aim of this unit is to provide the learner with the knowledge, understanding and skills required to fell small trees up to 380mm using a chainsaw.

Learning outcomes

In this unit, learners will be able to

1. Fell small trees up to 380mm

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Fell small trees up 380mm

Topics:

- 1.1 Hazards, risks, controls and emergency procedures
- 1.2 Legal, environmental and tree condition considerations
- 1.3 Felling techniques
- 1.4 Felling small trees

Topic 1.1

Hazards, risks and controls relevant to the site task and machine

Emergency procedures relevant to the work site

Safe working distances:

- Two tree lengths

Safeguards may include:

In proximity to paths:

- Warning signs
- Barrier tape
- Banks person
- Other

In proximity to roads:

- Warning signs
- Traffic management
- Permissions granted
- Other

In proximity to underground/overground wayleaves:

- Increase safe working distances
- Wayleaves shutdown
- Permit to work
- Other

Topic 1.2

Legal factors to consider in relation to tree felling may include:

- Felling licenses
- Tree Preservation Order (TPOs)
- Conservation areas
- Other

Environmental considerations may include:

- Location of fuelling site
- Valuable flora and fauna
- Damage to understory
- Other

Recognition of disease and decay in trees may include:

- Fungal growth/cavities
- Flaking/missing bark
- Discolouration of timber/bark
- Other

Modification of felling methods may include:

- placing felling cuts higher up the stem in sound timber
- use of assisted felling techniques to ensure accurate felling direction
- non-removal of buttresses roots/basal flare to provide more holding timber
- other

Topic 1.3

Advantages of setting up supports prior to felling may include:

- to provide an ergonomic working height for further processing
- to ease the turning of trees
- to reduce the need for manual handling
- other

Felling techniques for trees may include:

Step cut – trees under 200mm upright or slightly leaning:

- Make a horizontal cut slightly over 50% diameter in the front of the stem in the felling direction. The second cut is made at the opposite side, stepped above or below overlapping the first cut. The tree can be broken off the stump.

80% front cut- trees under 200mm

- Make a cut 80% of the diameter into the front of the stem in the felling direction. The second cut is made on the opposite side at an angle allowing the two cuts to meet. The tree can be removed from the stump.

Spear cut – trees under 200mm

- A cut is made at a steep angle into the front of the stem in the felling direction or compression sides approximately 50% diameter. Second cut on the opposite side at a steep angle to match/meet the first cut. The cut stem will slide away from the saw.

Double v-cut - under 200mm heavily leaning

- Make two cuts to form a V shaped profile on the compression side of the timber insuring they cross in the felling direction/lean. The severing cut is made at the same height at the back of the tree towards the felling direction forming a triangle hinge. The tree will fall in the direction of lean.

Basic fell - trees up to 380mm - upright/slightly leaning in direction of fell

- Sink cut of appropriate dimensions made in the felling direction. Felling cut made from the back parallel to the felling direction level or slightly higher than the bottom of the sink retaining sufficient hinge.

Split Level - Trees up to 380mm - upright or leaning away from the direction of fell.

- Sink cut of appropriate dimensions made in the felling direction. The first felling cut made at the back parallel to the felling direction, approximately two thirds of the diameter of the tree retaining sufficient hinge. A felling aid is placed into the cut. The second felling cut is made at parallel to the felling direction at an angle slightly overlapping the first felling cut retaining sufficient hinge.

Dogs tooth/holding cut - trees up to 380mm heavily leaning/weighted in the felling direction.

- Sink cut of appropriate dimensions made in the felling direction. Make a boring cut at normal felling height parallel to the felling direction across the diameter of the tree retaining sufficient hinge. Leave a hold on the back of the tree of approximately 25%. Sever the hold at an angle and parallel to the felling direction to approximately meet the back of the bore cut.

Danish/safe corner hold - trees up to 380mm used for upright or leaning.

- Sink cut of appropriate dimensions made in the felling direction. Make a boring cut at normal felling height parallel to the felling direction across the diameter of the tree retaining sufficient hinge. Withdraw saw to approximately half the diameter and cut out towards the back of the tree leaving a quadrant/holding cut. Place a felling aid into this cut if appropriate. Remove the final quadrant with an appropriate severing cut.

Equipment used to aid with the felling of trees maybe:

- Wedges
- Felling levers
- Other

Techniques that can be used to fell a tree that has sat back against the intended felling direction may include:

- Make a small boring cut into back of tree at position of felling cut and insert felling lever to lift tree over
- Make new felling cuts to fell tree (in the direction of lean if site conditions allow)
- Drive a wedge into the main felling cut to lift tree over

Topic 1.4

Pre-start checks and setting of the machine to include:

- Chain tension and condition checked for safe and effective use
- Safety features checked for condition and function
- External nuts and bolts checked for security
- Chainsaw contains sufficient fuel and chain oil for operations
- Battery saw contains sufficient oil and charge

Chainsaw is checked, started and function tested ready for use in accordance with manufacturer's information

Prepare site and escape routes by:

- Ensuring the control measures identified in site specific risk assessment are applied
- Determining the felling direction
- Setting up a felling bench if required
- Removing debris from around the base of the trees to be felled and compact vegetation to facilitate felling at appropriate height
- Removing dead or suppressed trees and any other vegetation adjacent to the tree, in the felling direction or escape routes that may be a danger
- Inspecting the felling area and adjacent trees for dead wood and insecure branches
- Ensuring no unauthorised person is within two tree lengths
- Prepare trees for felling by:
- Brushing lower branches taking into account:
- Correct break-in
- Position of the saw in relation to the operator, bar on opposite side of stem
- Height to which branches are removed
- Saw body not above shoulder height
- Operating technique
- Brushing close to the stem
- Removing climbing vegetation, buttresses and other obstructions as appropriate
- Inspecting the tree for signs of rot or decay

Preparing trees for felling may include:

- Brushing lower branches
- Correct break-in
- Position of the saw in relation to the operator, bar on opposite side of stem
- Height to which branches are removed
- Saw body not above shoulder height
- Operating technique
- Brushing close to the stem
- Removing climbing vegetation
- Removing buttresses and other obstructions as appropriate
- Inspecting the tree for signs of rot or decay

An appropriate felling direction is selected taking into account:

- Tree form
- Site conditions/considerations
- Hazards/obstacles
- Equipment used
- Other

Felling techniques should account for:

- The felling method chosen and safe working zones
- Selection and preparation of escape route(s)
- A sink of the appropriate dimensions
- Felling cuts made and felling aid employed using a safe and effective felling method
- A hinge being retained of adequate dimensions
- Appropriate aid tools are used safely when applicable
- Escape routes being used as soon as the tree begins to fall
- Site checked for safety once tree has fallen
- Stump height left appropriate to site specification

Incorrect techniques for dealing with hung up trees include:

- Felling the supporting tree
- Felling another tree across the hung-up tree
- Walking or working under a hung-up tree
- Climbing a hung-up tree
- Leaving a hung-up tree unattended
- Other

Danger areas in relation to hung up trees include:

- Directly under a hung-up tree
- Directly behind a hung-up tree

Take down methods may include:

- hinge reduction - roll out
- hinge removal – pole/drag back
- step down method
- other

Following hinge removal additional equipment maybe:

- Timber lengths to walk a tree backwards
- Smaller trees dragged with lifting aids
- Felling lever with cant hook for rolling
- Winches for pulling/rolling
- Mechanical assistance for dragging/lifting
- Other

Appropriate action to take if a tree cannot be taken down may include:

- The tree being cordoned off with warning tape
- Supervisor/colleagues informed
- Other

The takedown of hung-up trees must include:

- Assessing the position of tree and checking the condition of the hinge
- Removal of debris and obstacles from take down route
- Deciding on the final felling direction
- Preparing new escape routes as appropriate
- Selecting and positioning aid tools as required
- Ensuring no unauthorised persons are within two tree lengths or directly below on steep slopes
- Correct operator stance and safe position to the side of tree
- Appropriate position and angle of cuts using a cutting technique for the removal of an appropriate part of the hinge
- Safe withdrawal of the saw
- Leaving approximately 10% -20% of hinge to support the tree on each/either side appropriate to take down method utilised
- Safe placement of the saw on completion of cuts
- Aid tool positioned and attached safely to the tree

Aid tool operated ensuring:

- Good stance and operator position
- Correct pushing technique used (where appropriate)
- The use of correct lifting techniques
- Good grip
- The repositioning of the aid tool when required
- Operator not working in danger areas
- The release of the aid tool as the tree falls
- Use escape route(s)
- If tree does not fall through roll out technique, remnant of hinge removed by safe method (if still attached) and tree is walked down with an appropriate aid tool
- Tree in a stable condition before being processed

Risks to consider when removing branches may include:

- Tripping or falling over
- Contacting obstructions with chainsaw
- Tree rolling onto operator
- Spring back from cut branches or saplings when severed
- Kick back
- Other

Branch removal techniques should account for:

- A systematic sequence of cuts and position of the saw to remove branches as appropriate for the branching habit
- Correct stance and support of the saw on tree or right leg
- Left thumb around the front handle
- Neither handle released while the chain is moving
- Apply chain brake if reaching across bar
- Apply chain brake when negotiating obstacles
- Not walking when the saw is on the same side of the tree as the operator without applying the chain brake
- Avoid working on lower side of tree on side slopes
- Operator not reaching too far round with saw on far side of tree
- Operators not cutting towards legs or body
- Avoiding the use of the tip of guidebar
- Avoiding overreaching with chainsaw
- Not straddling the stem
- Compression and tension forces assessed, and appropriate cuts used
- Using an under-sweep technique if applicable
- The top cut at an appropriate diameter
- Top removed with a safe method of cutting
- The stem turned using appropriate aid tools/ techniques
- Using the stem for protection when removing remaining branches as appropriate
- Using a safe and effective method to sever remaining branches
- All branches being removed flush with the stem

Advantages of leaving a clean stem following branch removal may include:

- Reducing possible injury to the person moving the timber
- Reduce friction/collecting debris when
- Pulling timber along the ground
- Prevent damage to other trees when extracting timber
- Allowing timber to easily enter machines (chipper, peeler or saw bench)
- Easier stacking or loading
- Other

Brush and branches may be dealt with by:

- Chipping
- Stacking
- Windrowing
- Baling
- Other

Measuring of timber/logs could include:

- Loggers tape
- Measured stick
- Other

Cross-cutting of timber to length should include:

- Ensuring appropriate safe working distances from both fuel and other operators is maintained
- Correct use of PPE
- Timber is in a safe and appropriate position
- Safe starting procedure adopted

Safe stance adopted including:

- Legs and feet are clear of the chain
- Left thumb around the front handle
- Chainsaw is stable/secure/supported during crosscutting
- Minimal risk of muscular/skeletal injury
- Bar aligned to maintain accuracy
- Head out of line of chain
- Use of throttle to cut safely and efficiently
- Cutting techniques employed to complete severance of timber
- Appropriate boring technique used if applicable
- Sequence of cuts undertaken to prevent saw becoming trapped
- Appropriate aids used for lifting, rolling or levering if applicable
- Accuracy of measurement within site specification and reasonable tolerances
- Tension and compression cuts should meet
- Chain brake used appropriately
- Saw switched off and left in safe position, bar cover replaced if appropriate

Stacking of timber should take into account:

- Use of appropriate aids to handle/ move products
- Correct stance during lifting
- Avoiding excessive lifting by levering, sliding, rolling
- Quality of stacking must be to an agreed job specification
- Tidy stacking of timber
- Position of stack appropriate to method of extraction
- Manually constructed stacks are limited to one metre high

Timber should be left in a safe, stable condition and appropriate position.

All waste produced is disposed of in line with legislation, good practice and site requirements.

All tools, equipment and personal protective equipment is used in line with industry good practice.

It is ensured that any possible environmental damage is minimised at all times.

All activities must be completed in a way which protects the operator and those around them.

Appendix 1 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*

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people, organisations and economies develop their skills for growth. We work with education providers, employers and governments in over 100 countries across the world to help people, businesses and economies grow by shaping skills systems and supporting skills development.

The Group is made up of City & Guilds, ILM, Kineo, The Oxford Group, Gen2, and Intertrain. Together we set the standard for professional and technical education and corporate learning and development around the world.

Copyright

The content of this document is, unless otherwise indicated, © The City & Guilds of London Institute and may not be copied, reproduced or distributed without prior written consent. However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification

The Standard Copying Conditions (see the City & Guilds website) also apply.

Published by City & Guilds, a registered charity established to promote education and training

City & Guilds of London Institute
Giltspur House
5-6 Giltspur Street
London
EC1A 9DE

cityandguildsgroup.com
