



National Unit Specification: general information

UNIT Excavating Holes and Trenches: An Introduction (SCQF level 5)

CODE F6LK 11

SUMMARY

This Unit provides an introduction to the key principles and techniques of excavating holes and trenches in a construction environment. It will develop the candidate's understanding and practical skills in excavating holes and trenches. Adherence to regulatory and legislative safety requirements will be ensured at all times, and candidates will learn how to use tools and equipment safely. On completion of this Unit, candidates will be able to manually excavate materials within a designated area, having correctly interpreted work specifications and/or drawings and prepared the work area beforehand. This will include the pre-operational checks to be undertaken within the work area, such as the need to avoid damage to utilities apparatus, street ironworks and any obstructions from the area before excavation work commences. This Unit is suitable for candidates working towards a Modern Apprenticeship in the Construction Operative and Specialist suite.

OUTCOMES

- 1 Establish requirements for excavation work according to the specification.
- 2 Prepare the work area for excavation work.
- 3 Excavate holes and trenches correctly.

RECOMMENDED ENTRY

While entry to this Unit is at the discretion of the centre, candidates undertaking a National Progression Award at SCQF level 5, as part of a Modern Apprenticeship, must meet the necessary criteria which includes being employed in the relevant industry.

Administrative Information

Superclass: TK

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National Unit Specification: general information (cont)

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CREDIT VALUE

1 credit at SCQF level 5 (6 SCQF credit points at level 5*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

CORE SKILLS

There is no automatic certification of Core Skills in this Unit.

This Unit provides opportunities for candidates to develop aspects of the following Core Skills:

- ◆ *Numeracy* (SCQF level 3)
- ◆ *Problem Solving* (SCQF level 3)
- ◆ *Working with Others* (SCQF level 3)
- ◆ *Communication* (SCQF level 3)

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Establish requirements for excavation work according to the specification.

Performance Criteria

- (a) Interpret accurately the drawings and/or work specification for the task.
- (b) Confirm the composition of the ground to be excavated.
- (c) Select the appropriate tools and equipment for use during the task.
- (d) Select appropriate personal protective equipment (PPE) in accordance with organisational requirements.

OUTCOME 2

Prepare the work area for excavation work.

Performance Criteria

- (a) Identify hazards, underground and overhead utilities apparatus to avoid during excavation work.
- (b) Remove any street ironworks and any obstructions from the work area.
- (c) Measure correctly the area to be excavated.
- (d) Mark out the area to be excavated in accordance with the given specification.

OUTCOME 3

Excavate holes and trenches correctly.

Performance Criteria

- (a) Use tools and equipment in accordance with workplace practice.
- (b) Excavate holes and trenches safely, meeting the work specification.
- (c) Position any excavation supports correctly.
- (d) Secure any excavation supports safely.
- (e) Store any re-usable extracted materials appropriately.
- (f) Comply with all current workplace safety and legislative requirements.
- (g) Dispose of waste in accordance with legislative requirements.

National Unit Specification: statement of standards (cont)

UNIT Excavating Holes and Trenches: An Introduction (SCQF level 5)

EVIDENCE REQUIREMENTS

Candidates are required to produce evidence to confirm that they have achieved all Outcomes and Performance Criteria outlined in this Unit.

Performance evidence is required to demonstrate the candidate has achieved the standard specified in the Outcomes and Performance Criteria for Outcomes 1, 2 and 3. Performance evidence must be supplemented with an assessor observation/operational checklist and produced at an appropriate interval in training, under supervised conditions, once the candidate has developed the necessary skills and knowledge required to carry out the work.

Performance evidence should be demonstrated by the candidate manually excavating holes and trenches in one of the following ground surfaces (up to 2 metres):

- ◆ Modular
- ◆ Rigid
- ◆ Flexible
- ◆ Grass area

As part of the assessment for this Unit, the candidate will also submit written product evidence such as a works checklist or completed risk assessment form. Oral evidence of knowledge and understanding may be demonstrated by the candidate during practical assignments set for Outcomes 1, 2 and 3 and noted at the time by the observer.

National Unit Specification: support notes

UNIT Excavating Holes and Trenches: An Introduction (SCQF level 5)

This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time length allocated to this Unit is at the discretion of the centre, the notional design length is 40 guided learning hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

The Outcomes and Performance Criteria for this Unit can be demonstrated by the candidate performing manual excavation work (up to 2 metres) on one of the following ground surfaces:

- ◆ Modular
- ◆ Rigid
- ◆ Flexible
- ◆ Grass area

The content and context of this Unit has been set at an introductory level so that the candidate can develop a basic knowledge and ability in excavating holes and trenches within a construction environment.

Health and Safety are vital to working practices within the construction industry and therefore, emphasis will be placed wherever appropriate during the delivery of this Unit on the correct application of Health and Safety principles and processes, in accordance with current codes of practice and legislation.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

These notes are for guidance purposes only, but are not to be considered as complete guidance to learning and teaching approaches.

Opportunities for integrated delivery of this Unit may be possible if candidates are also taking the NPA in Construction Operations optional Units in *Setting out Secondary Dimensional Work Controls*, or in *Providing Temporary Excavation Supports*. Delivery may also be integrated with mandatory Units.

The introductory training for this Unit should take place in a separate training area independent of the productive work environment and using dedicated equipment and resources. This should cover underpinning and practical principles before any practical application of knowledge is carried out by candidates.

Delivery of this Unit will be focused on enabling candidates to develop the knowledge required for excavating holes and trenches safely before they are given the opportunity to do so within the workplace environment. This will include ensuring candidates learn about the necessary procedures in preparing the designated work area before any excavation work is carried out. Emphasis will also be placed on the importance of candidates accurately understanding and interpreting the information provided within work specifications and drawings.

National Unit Specification: support notes (cont)

UNIT Excavating Holes and Trenches: An Introduction (SCQF level 5)

During delivery of the practical components of this Unit, candidates should understand the importance of avoiding damage to underground or overhead utilities apparatus, and storing any materials that can be re-used. Teachers should also ensure that candidates know to adhere to relevant Health and Safety regulations and legislation relating both to working practices within the construction environment, as well as those specific to any practical task they are requested to carry out (such as emphasising the importance of selecting and using the correct PPE at all times).

E-learning approaches may be appropriate to help tailor delivery to suit the individual needs or learning styles of candidates. This might include, for example, encouraging learners to use electronic resources to conduct research into a specific knowledge area.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

Candidates will be need to apply the Core Skill of *Numeracy* (SCQF level 3) when interpreting the measurements and other information provided in the work drawings and specification, as well as when calculating and marking out the excavation to be performed (Outcomes 1 and 2).

The opportunity for the Core Skill *Working with Others* (SCQF level 3) will be provided as candidates check and inspect the work area for potential hazards, as well as ensuring the safety of others as they comply with codes of practice and working regulations (Outcomes 1, 2 and 3).

Throughout this Unit, candidates will be expected to develop the Core Skill of *Communication* (SCQF level 3) within the work environment, for example to inform others of any safety considerations, using the correct terminology and an appropriate tone. In addition, assessment processes for Outcomes 1 and 2 will enable candidates the opportunity to develop their Written Communication skills.

The interpretation of work specifications and drawings will also require candidates to think critically, plan and organise the task accordingly (Outcome 1) — key aspects of the Core Skill of *Problem Solving* (SCQF level 3).

National Unit Specification: support notes (cont)

UNIT Excavating Holes and Trenches: An Introduction (SCQF level 5)

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Centres may use the Instruments of Assessment they consider to be most appropriate, and the following notes are given as guidance only.

Opportunities for integrated assessment of this Unit may be possible if candidates are also taking the Units in *Setting out Secondary Dimensional Work Controls*, or *Providing Temporary Excavation Supports*. Assessment may also be integrated with mandatory Units.

Underpinning and practical knowledge of excavating holes and trenches should be assessed before any practical assignments are carried out by candidates. This will include assessment of a candidate's ability to prepare the work area for a specified task. Assessment of practical performance should take place under supervised conditions and confirm a candidate's ability to carry out basic excavation procedures using any machinery or equipment correctly and safely, whilst adhering to Health and Safety regulations and legislation.

Outcomes 1, 2 and 3 may be assessed by centres setting candidates a series of appropriate practical assignments carried out under supervised conditions and recorded in an assessor observation/operational checklist. Practical assignments undertaken by a candidate will be assessed according to their ability to carry out the task safely, using appropriate machinery according to manufacturer's guidelines.

Adherence to appropriate working regulations and Health and Safety procedures will be observed during the practical exercise carried out by the candidate towards Outcomes 1, 2 and 3.

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements