



National Unit specification: general information

Unit title: Jewellery: Soldering (SCQF level 5)

Unit code: H09T 11

Superclass: JH

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Summary

This Unit covers the skills and knowledge required to produce jewellery using soldering as a joining technique. Candidates will prepare components and develop an understanding of the tools, materials and methods required to produce soldered objects.

This Unit forms part of the National Certificate in Jewellery but can be delivered as a free standing Unit.

Outcomes

- 1 Prepare components for soldering.
- 2 Join components using appropriate soldering methods and materials correctly and safely.
- 3 Check and clean soldered items.

Recommended entry

Entry is at the discretion of the centre.

Credit points and level

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

General information (cont)

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Core Skills

Achievement of this Unit gives automatic certification of the following Core Skills component:

- ◆ Critical Thinking at SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

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

Prepare components for soldering.

Performance Criteria

- (a) Clean components thoroughly in preparation for assembly.
- (b) Choose appropriate methods for dry assembly prior to soldering.
- (c) Apply appropriate flux prior to soldering.

Outcome 2

Join components using appropriate soldering methods and materials correctly and safely.

Performance Criteria

- (a) Select correct solder appropriate to the materials and to the task.
- (b) Apply correct quantity of solder for the task.
- (c) Use appropriate flame size for the size of the components.
- (d) Apply sufficient heat to melt the solder and completely fill the required join.

Outcome 3

Check and clean soldered items to an acceptable standard.

Performance Criteria

- (a) Join components correctly and accurately as per intention.
- (b) Ensure joins have no gaps or holes.
- (c) Use appropriate chemical pickle to leave items free of flux and oxide residue.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Product and performance evidence will be produced, under supervised workshop conditions, to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Outcomes 1, 2 and 3.

Candidates will be required to produce a minimum of three examples of simple joins and a minimum of one example of multiple joins on a single object.

Each example will demonstrate a completed soldered object which accurately reflects the original intention. It should be pickled and ready for polishing or further manufacturing methods.

During its construction candidates will demonstrate that they have correctly followed the processes as demonstrated.

Appropriate and safe uses of chemicals are used to produce a clean object ready for polishing or further construction processes.

National Unit specification: support notes

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

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

Guidance on the content and context for this Unit

This Unit could be studied on its own as a freestanding Unit, as part of a group of related Units or, in conjunction with other Units, as part of the National Certificate in Jewellery at SCQF level 6.

In particular it would be useful to include as part of a related group of Units which take the candidates through the process from initial concept, manufacture and polishing to a completed item of jewellery.

The aim of this Unit is to cover the skills and knowledge required to produce jewellery using soldering as a joining technique. In order to carry this out candidates will be introduced to the equipment and materials required for soldering. It would be an advantage to have experience of a variety of heat sources available in the Jewellery industry such as, natural gas and air torches, propane and Micro Welder in order for candidates to progress to more advanced levels

Candidates will be shown how to identify the materials to be joined and the most appropriate joining method. They will also learn the importance of selecting the correct grades of solder and methods of joining components, to achieve maximum strength. In addition they will learn the importance of heat, flux and solder during hot joining techniques and the importance of dry assembling components together before carrying out the joining operations.

The use of binding wire, clips tension or gravity to locate and hold components, where appropriate will be covered as well as how to recognise the point at which melting is about to take place. They will also learn how to identify and avoid typical faults that can occur with the joining techniques and processes as well as the procedures to be undertaken if a fault is identified.

Candidates will understand the safe use, proportions and ways in which chemicals are used for cleaning the completed work and how to check the finished work meets the standard required.

Throughout the Unit appropriate information should be given regarding Health and Safety issues relating to the tools and equipment used.

This Unit broadly aligns to the National Operational Standards for Jewellery from Creative and Cultural Skills:

- J2.8 Carry out permanent joining of jewellery or silverware components
- J3.9 Join jewellery components by soldering

National Unit specification: support notes (cont)

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Guidance on learning and teaching approaches for this Unit

Tutors should provide step by step demonstrations of the processes involved allowing candidates several attempts to gain confidence in completing the tasks. Candidates could assemble a given set of components, including wire and sheet elements, or assemble components they have prepared for other Units.

Candidates should be encouraged to explore the variety of seams commonly used in the jewellery industry such as, ring shanks (wire and sheet), jump rings, butt joins etc. Exemplars could be provided for discussion.

Guidance on approaches to assessment for this Unit

Each candidate should have several opportunities to develop practical skills required in this Unit and should be assessed at appropriate points throughout the Unit.

Outcomes 1, 2 and 3 are likely to be assessed across a range of objects.

Evidence for performance assessment should be gathered by observation checklists and product evidence by the use of the objects which candidates create.

Opportunities for the use of e-assessment

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 social software. 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)*.

National Unit specification: support notes (cont)

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Opportunities for developing Core Skills

In this Unit candidates will cover the skills and knowledge required to produce jewellery using soldering as a joining technique. Candidates will prepare components and develop an understanding of the tools, materials and methods required to produce soldered objects.

Candidates will:

- ◆ Prepare materials for soldering to their interpretation of the correct standard and explain their decisions
- ◆ Select appropriate tools and materials and justify their selection
- ◆ Accurately solder jewellery items in a workshop environment paying due attention to the safety and working conditions of others
- ◆ Clean and check soldered items to their interpretation of the correct standard and explain their decisions

As candidates are doing this Unit they will be developing aspects of the Core Skills in *Communication; Problem Solving* and *Working with Others*.

This Unit has the Problem Solving component of Critical Thinking embedded in it, so when the candidate achieves this Unit their Core Skills profile will be updated to show they have achieved Critical Thinking at SCQF level 4.

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

History of changes to Unit

Version	Description of change	Date
02	Core Skills Component Critical Thinking at SCQF level 4 embedded.	20/01/2012

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