



Higher National Unit specification

General information for centres

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

Unit code: F8PC 34

Unit purpose: This Unit is designed to enable the candidate to develop the knowledge, understanding and skills relevant to the application of metal leaf and powder materials. The candidate will demonstrate their understanding of the techniques and practices as well as their practical abilities of applying metal leaf and powders using free brush and/or stencilling processes.

On completion of the Unit the candidate should be able to:

- 1 Prepare common substrates to receive metal leaf and powder.
- 2 Select, prepare and apply transfer and loose leaf metals.
- 3 Select, prepare and apply metal powder.
- 4 Explain the variations in the mordant types available for gilding and bronzing.

Credit points and level: 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. However it is recommended that candidates have completed the Professional Development Award in Painting and Decorating at SCQF level 6 or have the equivalent level of industrial experience and prior learning.

Core Skills: There are opportunities to develop the Core Skill of *Communication, Numeracy* and *Working with Others* all at SCQF level 5 and *Information and Communications Technology* at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes. The Unit was developed as part of the Professional Development award in Painting and Decorating at SCQF level 7, and is aimed at candidates following a career in Painting and Decorating with current industrial experience.

General information for centres

Assessment: Candidates will be given the opportunity to develop the skills and knowledge in Painting and Decorating by learning about the application of transfer, loose leaf metals and metal powders. Techniques and practices used to set out the work projects should be integrated in the practical tasks undertaken. The principles and techniques should be explained and demonstrated throughout the practical activities.

This Unit is assessed on candidates' performance of setting out and applying mordants by free brush or stencil techniques and applying metals in both leaf and powder form, demonstrating the ability to meet the Evidence Requirements in all Outcomes.

In order to achieve this Unit, candidates will be required to present sufficient evidence that all Knowledge and/or Skills elements for each Outcome have been met. Details of these requirements are given for each Outcome.

The assessment instruments used should follow the general guidance offered by the Scottish Qualifications Authority (SQA) assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Evidence will be gathered through projects which cover Outcomes 1–3 and observations of candidates' work processes and assessment of the completed work. Outcome 4 will be assessed through open-book processes using information/data gathered during the practical project work, and all assessment will be carried out under controlled, supervised conditions. Candidates must achieve all the Knowledge and/or Skills Evidence Requirements specified for each Outcome to gain this Unit.

Centres may use the instrument of assessment which they consider to be most appropriate but are advised to use the Painting and Decorating level 7 Training and Assessment Programme (TAP) which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been through prior verification.

Accurate records should be made of the assessment instruments used showing how evidence is generated for each Outcome and giving marking schemes, checklists and recorded Candidate feedback. Records of Candidates' achievement should be retained and made available for external verification.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Outcome 1

Prepare common substrates to receive metal leaf and powder

Knowledge and/or Skills

- ◆ Common substrates for decorating
- ◆ Physical and/or chemical properties
- ◆ Preparation and painting processes for common substrates
- ◆ Safe working practices
- ◆ Sustainability/Site Waste Management
- ◆ Modern Preparation Techniques

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ provide specifications for preparing common substrates giving cognisance to each type and its physical and/or chemical properties
- ◆ demonstrate modern methods of preparation for new and/or pre-coated substrates
- ◆ apply barrier coats as determined by the processes
- ◆ use safe working practices relevant to the preparation processes required for applying metal leaf and powder
- ◆ Use common procedures to minimise waste and onsite disposal

Evidence will be gathered through observation of work processes and assessment of the completed work. Assessment should be carried out under controlled, supervised conditions.

The assessment related to specifications should be conducted under open-book supervised conditions, and candidates should be encouraged to access information using a variety of methods which should include ICT resources.

Assessment Guidelines

This Outcome is assessed on candidates' actual performance of preparing common substrates to receive metal leaf and powder.

In the assessment candidates will be required to complete practical projects based on specifications for an actual project. This should be conducted in a workshop environment, and should cover both new and pre-coated substrates, to include glass work.

Higher National Unit specification: statement of standards (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

Outcome 2

Select, prepare and apply transfer and loose leaf metals

Knowledge and/or Skills

- ◆ Interpreting data/information sheets
- ◆ Selecting appropriate mordants
- ◆ Applying mordants
- ◆ Applying metals in transfer leaf and loose leaf form
- ◆ Terminology related to mordants, and applying metal leaf in transfer and loose form
- ◆ Safe working practices
- ◆ Sustainability/Site Waste management

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ interpret data/information sheets
- ◆ apply metals in transfer leaf and loose leaf form
- ◆ define terminology related to the processes involved
- ◆ follow current safe working practices
- ◆ minimise waste of materials throughout practical tasks
- ◆ complete work to a standard matching specification or exemplar provided by centre

The following will assist the assessor in judging candidates' performance against the Evidence Requirements.

The interpretation of information is correct	as per specification
The selection of tools/equipment is appropriate	as per specification
The selection of mordant is appropriate for the task	as per specification
Mordant application	evenly, without misses
Drying of mordant checked correctly	for 'tack' stage
Metal leaf in transfer form is applied correctly	without misses
Metal leaf in loose form is applied correctly	without misses
Waste minimised	work is skewed
Barrier coat removed (where appropriate)	without damage to metal
Metal protected (where appropriate)	+2mm outwith edge of metal
Wear appropriate Personal protective Equipment (PPE)	at all times
Current Health and Safety legislation	complies at all times

Evidence will be gathered through observation of work processes and assessment of the completed work. Assessment should be carried out under controlled, supervised conditions. In order to achieve this Outcome, candidates are required to present sufficient evidence that they have met all the knowledge and skills elements. An observation checklist should be completed to ensure that the candidates have met the required specification and standards, and this observation checklist should be retained as evidence for external verification.

Higher National Unit specification: statement of standards (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

A written short answer assessment should also be used to test the candidates' knowledge of the terminology and processes related to the application of metal leaf in both transfer and loose form, and be conducted under closed-book supervised conditions.

Assessment Guidelines

This Outcome is assessed on candidates' actual performance of applying transfer and loose leaf metals to given specifications and required standards.

Candidates should be provided with drawings and specifications for the practical tasks, with assessment being carried out in a workshop environment. Timing for this assessment should be determined prior to commencement and an observation checklist should be completed to ensure candidates have evidenced all the practical knowledge and skills included in this Outcome to the specifications and standards required.

The written assessment should be done in a controlled environment with candidates completing it in a closed-book situation, and the results being retained for external verification. This could be achieved by having a combined assessment for Outcomes 2 and 3.

Outcome 3

Select prepare and apply metal powder

Knowledge and/or Skills

- ◆ Interpreting data/information sheets
- ◆ Selecting appropriate mordant
- ◆ Applying mordant
- ◆ Applying metals in powder form
- ◆ Terminology related to mordants, and applying metals in powder form
- ◆ Safe working practices
- ◆ Sustainability/Site Waste management

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ interpret data/information sheets
- ◆ apply metals in powder form
- ◆ define terminology related to the processes involved
- ◆ follow current safe working practices
- ◆ minimise waste of materials throughout practical tasks
- ◆ complete work to a standard matching specification or exemplar provided by centre

Higher National Unit specification: statement of standards (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

The following will assist the assessor in judging candidates' performance against the Evidence Requirements

The interpretation of information is correct	as per specification
The selection of tools/equipment is appropriate	as per specification
The selection of mordant is appropriate for the task	as per specification
Mordant application	evenly, without misses
Drying of mordant checked correctly	for 'pre-tack' stage
Metal in powder form is applied correctly	without misses
Waste minimised	excess is collected for re-use
Barrier coat removed (where appropriate)	without damage to work
Metal protected	+2mm outwith edge of metal
Wear appropriate Personal Protective Equipment (PPE)	at all times
Current Health and Safety legislation	complies at all times

Evidence will be gathered through observation of work processes and assessment of the completed work. Assessment should be carried out under controlled, supervised conditions. In order to achieve this Outcome, candidates are required to present sufficient evidence that they have met all the knowledge and skills elements. An observation checklist should be completed to ensure that candidates have met the required specification and standards and this observation checklist should be retained as evidence.

A written short answer assessment should also be used to test candidates' knowledge of the terminology and processes related to the application of metal in powder form, and be conducted under closed-book supervised conditions.

Assessment Guidelines

This Outcome is assessed on candidates' actual performance of applying powdered metals to a given specification and required standards.

Candidates should be provided with drawings and specifications for the practical tasks, with assessment being carried out in a workshop environment. Timing for this assessment should be determined prior to commencement and an observation checklist should be completed to ensure candidates have evidenced all the practical knowledge and skills included in this Outcome to the specifications and standards required.

The written assessment should be done in a controlled environment with candidates completing it in a closed-book situation, and the results being retained for external verification. This could be achieved by having a combined assessment for Outcomes 2 and 3.

Higher National Unit specification: statement of standards (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

Outcome 4

Explain the variations in the mordant types available for gilding and bronzing

Knowledge and/or Skills

- ◆ Listing the ingredients of solvent-borne and water-borne mordants
- ◆ Setting up a sampling test for mordants
- ◆ Recording of tack times for solvent-borne and water-borne mordants
- ◆ Recording of drying times for mordant samples
- ◆ Noting the effects of the atmospheric conditions on the drying process

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ research the contents of solvent-borne and water-borne mordants
- ◆ carry out sampling tests in relation to ‘tack’ times and drying times for solvent-borne and water-borne mordants
- ◆ record accurately the results of the sampling tests
- ◆ report on how the mordants sampled are affected by the prevailing atmospheric conditions

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through an assignment where candidates will use the mordants available and produce a report from the results of the sampling tests.

Assessment Guidelines

Research for the contents of the mordants should be carried out using ICT resources within the Centre.

In the assessment, working initially in a pair, candidates will be required to set up the sampling tests using the mordants available in the centre, but which must cover both solvent-borne and water-borne types. A variety of locations within the centre should be used for the tests which will provide the required differences in atmospheric conditions. The results of the tests however, should be recorded and used individually to produce candidates’ finished report on the mordants and the way(s) in which they are affected by the atmospheric conditions.

This could be conducted as an assignment in a workshop environment, where differing atmospheric conditions will be available. Timing for this assessment should be determined prior to commencement. An observation checklist should be completed to ensure candidates have evidenced all the knowledge and skills included in this Outcome.

Administrative Information

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Unit title:	Painting and Decorating: Applying Metal Leaf and Powder
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Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

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 has been designed as a mandatory Unit in the Professional Development award in Painting and Decorating at SCQF level 7 and may be delivered in a sequence suitable for individual candidates and centres.

This Unit is designed to enable candidates to develop the knowledge, understanding and skills relevant to applying metal leaf and powder.

Candidates following a career in Painting and Decorating with current industrial experience will benefit from undertaking this Unit.

The knowledge and skills for this Unit should be incorporated with modern methods of preparing and coating substrates and applying metal leaf and powder where possible. Terminology commonly associated with Painting and Decorating should be used consistently throughout this Unit.

It is vitally important that candidates gain an understanding and knowledge of the processes involved in applying metal leaf and powder.

Current Health and Safety, sustainability and waste management issues should be fully emphasised throughout the delivery of this Unit. Candidates should complete a Risk Assessment before attempting the application of metal powder due to the potentially toxic nature of some of the metals which may be used.

Working to written instructions and specifications, and using suitable methods of checking completed work, should be demonstrated by the candidates.

Higher National Unit specification: support notes (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

Guidance on the delivery and assessment of this Unit

The importance of preparation of substrates, the methods of setting out work and the principles and processes of applying metal leaf and powder should be demonstrated to the candidates before summative assessment is undertaken.

The effects that different atmospheric conditions can have on the mordants and how the alteration of their recipes can overcome these effects, should be fully explained and demonstrated to the Candidate.

Whilst the Unit will cover aspects of a variety of metal types and forms, candidates will only be required to use the following for Practical Assessment purposes:

- ◆ two metal types in transfer leaf form — one of which must be gold — applied to both flat and relief/moulded surfaces
- ◆ two metal types in loose leaf form — one of which must be gold — applied to both flat (glass) and relief/moulded surfaces
- ◆ two metal types in powder form — applied to both flat and relief/moulded surfaces

Safe working practices should be looked at in accordance with current legislation, particularly when using metal powders having a copper content. Sustainability is important, and should be emphasised to candidates in the area of waste products, which can most often be recycled. Reference to criteria affecting sustainability should be highlighted, as should the impact of not implementing it on the environment and the legislation which promotes it.

Candidates should be encouraged to evaluate their own performance in relation to what will be the minimum acceptable standard and encouraged to exceed this standard.

Opportunities for developing Core Skills

Communication skills and *Working with Others* at SCQF level 5 can be developed when candidates are working in pairs on the assignment for Outcome 4. Setting up the tests on the mordants and recording the results will enable them to agree the responsibilities for the tasks required to do this and provide them with the support needed for gathering the information required to complete their individual report.

Information and Communications Technology at SCQF level 4 may be developed by the Candidates researching the contents of solvent-borne and water-borne mordants, and how their recipes can be altered to suit prevailing atmospheric conditions.

Numeracy could be developed at SCQF level 5 when transferring dimensions from drawings and using them for setting out and for the calculation of the requirements of the metal leaf types for the practical projects.

Higher National Unit specification: support notes (cont)

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

Open learning

Although this Unit could be delivered by distance learning, it would require a considerable degree of planning by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would have to be made to ensure that:

- ◆ the practical activity is supervised by a responsible person and clearly recorded (using an assessment checklist, or on video) for the assessor
- ◆ the assessor is, at some point able to question the candidate on the performance (face to face, by telephone, online)
- ◆ the assignment is conducted in a supervised environment

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

General information for candidates

Unit title: Painting and Decorating: Applying Metal Leaf and Powder

This Unit is designed to develop your practical skills and knowledge of the application of metal leaf and powder. You will develop your understanding of modern and traditional practices and techniques and comply with sustainability issues and current Health and Safety legislation throughout the Unit.

There are four Outcomes in this Unit as follows:

- ◆ prepare common substrates to receive metals, in both leaf and powder form
- ◆ select, prepare and apply transfer and loose leaf metals
- ◆ select, prepare and apply metal powders
- ◆ explain the variations in the mordant types available for gilding and bronzing

The Unit is mainly practical based whereby you will develop skills in the processes more commonly known as gilding and bronzing, where you will use:

- ◆ gold and semi-precious metals in leaf form
- ◆ metallic powders (non-ferrous alloys)
- ◆ specialist tools and equipment

In most areas of the practical assignments attention will be given to sustainability by minimising wastage by recycling waste materials from the work.

Health and Safety issues will be addressed by risk assessments particularly when you are using metallic powders having a copper base.

There are opportunities to develop the Core Skill of *Communication*, *Numeracy* and *Working with Others* all at SCQF level 5 and *Information and Communications Technology* at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.