Institute for Apprenticeships & Technical Education

End-point assessment plan for Jewellery, Silversmithing and Allied Trades Professional apprenticeship standard

Apprenticeship standard reference number	Apprenticeship standard level	Integrated end-point assessment
ST0439	3	No

Contents

Introduction and overview

This document sets out the requirements for end-point assessment (EPA) for the Jewellery, Silversmithing and Allied Trades Professional apprenticeship standard. It is for end-point assessment organisations (EPAOs) who need to know how EPA for this apprenticeship must operate. It will also be of interest to Jewellery, Silversmithing and Allied Trades Professional apprentices, their employers and training providers. This document provides the EPA design requirements for end-point assessment organisations (EPAOs) for this apprenticeship standard.

EPA must be conducted by an EPAO approved to deliver EPA for this apprenticeship standard. Each employer should select an approved EPAO from the Education & Skills Funding Agency's Register of end-point assessment organisations (RoEPAO).

Full time apprentices will typically spend 36 months on-programme (before the gateway) working towards the occupational standard, with a minimum of 20% off-the-job training. All apprentices must spend a minimum of 12 months on-programme. Apprentices will be assessed in the core component of the standard and one of the optional components of the standard.

The EPA period should only start, and the EPA be arranged, once the employer is satisfied that the apprentice is deemed to be consistently working at or above the level set out in the occupational standard, all of the pre-requisite gateway requirements for EPA have been met and can be evidenced to an EPAO.

The EPAO must confirm that all required gateway evidence has been provided and accepted as meeting the gateway requirements. The EPAO is responsible for confirming gateway eligibility. Once this has been confirmed, the EPA period starts.

For level 3 apprenticeships and above, apprentices without English and mathematics at level 2 must achieve level 2[1] prior to taking their EPA.

The EPA must be completed within an EPA period lasting typically 4 months, after the EPA gateway.

The EPA consists of 3 discrete assessment methods.

The individual assessment methods will have the following grades:

Assessment method 1: Observation and questioning

· Fail
· Pass
· Distinction

Assessment method 2: Project, report and questioning

· Fail
· Pass

[1] [1] For those with an education, health and care plan or a legacy statement, the apprenticeship's English and mathematics minimum requirement is Entry Level 3. British Sign Language (BSL) qualifications are an alternative to English qualifications for those who have BSL as their primary language.

Assessment method 3: Professional discussion underpinned by a portfolio

· Fail
· Pass
· Distinction

Performance in the EPA will determine the overall apprenticeship standard grade of:

· Fail
· Pass
· Distinction

EPA summary table

On-programme (typically 36 months)	Training to develop the occupation standard's knowledge, skills and behaviours (KSBs). Training towards English and mathematics Level 2, if required. Compiling a portfolio of evidence.
End-point assessment gateway	The employer must be content that the apprentice is working at or above the level of the occupational standard. Apprentices must have achieved English and mathematics Level 2. **For the project, report and questioning:** The EPAO should sign-off the project's subject, title and scope to confirm its suitability prior to the project commencing. **For the professional discussion:** A portfolio: the portfolio will have been completed by the apprentice during their on-programme training and submitted to the EPAO either in hard-copy or electronic format at the gateway. The portfolio must cover the knowledge, skills and behaviours that are mapped to the professional discussion assessment method which it underpins. Please see gateway section below for full details.
End-point assessment (which will typically take 4 months)	Assessment method 1: Observation and questioning With the following grades: · Fail · Pass · Distinction Assessment method 2: Project, report and questioning With the following grades: · Fail · Pass Assessment method 3: Professional discussion underpinned by a portfolio With the following grades: · Fail · Pass · Distinction Performance in these assessment methods will determine the overall apprenticeship standard grade of: · Fail · Pass · Distinction

Length of end-point assessment period

The EPA will be completed within an EPA period lasting typically of 4 months, starting when the EPAO has confirmed that all gateway requirements have been met.

Order of end-point assessment methods

The assessment methods may be delivered in any order. The result of one assessment method does not need to be known before starting the next.

It is envisaged that the observation and questioning, professional discussion and questioning component of the project will all typically take place on the same day.

EPA gateway

The apprentice should only enter the gateway once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, that is to say they are deemed to have achieved occupational competence. In making this decision, the employer may take advice from the apprentice's training provider(s), but the decision must ultimately be made solely by the employer. The EPAO determines when all gateway requirements have been met, and the EPA period will only start once the EPAO has confirmed this.

It is acknowledged that in many cases, items will need to be produced to strict manufacturing/design specifications, embodied within company procedures. It is important that employers putting apprentices forward for assessment provide the EPAO with information relating to those standards in order that the independent assessor can assess against them during the assessment.

In addition to the employer's confirmation that the apprentice is working at or above the level in the occupational standard, the apprentice must have completed the following gateway requirements prior to beginning EPA:

• English and mathematics at level 2. For those with an education, health and care plan or a legacy statement, the apprenticeship's English and maths minimum requirement is Entry Level 3. A British Sign Language (BSL) qualification is an alternative to the English qualification for those whose primary language is BSL.

For the observation and questioning:

- no specific requirements

For the project, report and questioning:

- A project scope:
  - The project's subject, title and scope will be agreed between the employer and the EPAO at the gateway. The employer will ensure it has a real business application and the EPAO will ensure it meets the requirements of the EPA (including suitable coverage of the KSBs assigned to this assessment method). The EPAO should sign-off the project's subject, title and scope to confirm its suitability prior to the project commencing.
  - This should demonstrate that the project will provide sufficient opportunity for the apprentice to meet the assessment criteria. The project scope is not assessed but should typically be no longer than 500 words.
  - The project scope needs to include a summary of the project plan, research requirements, an overview of how the project will be planned to include timeframes taking into account the deadlines stipulated within this EPA plan.

For the professional discussion:

- apprentices must compile a portfolio of evidence during the on-programme period of the apprenticeship
- it must contain evidence related to the KSBs that will be assessed by the professional discussion
- the portfolio of evidence will typically contain 10 discrete pieces of evidence
- evidence must be mapped against the KSBs

- evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is suggested
- evidence sources may include:
    - workplace documentation/records, for example workplace policies/procedures, records
    - witness statements
    - annotated photographs
    - video clips (maximum total duration 10 minutes); the apprentice must be in view and identifiable

  This is not a definitive list; other evidence sources are possible.
- it should not include reflective accounts or any methods of self-assessment
- any employer contributions should focus on direct observation of performance (for example witness statements) rather than opinions
- the evidence provided must be valid and attributable to the apprentice; the portfolio of evidence must contain a statement from the employer and apprentice confirming this
- the portfolio of evidence must be submitted to the EPAO at the gateway

The portfolio of evidence is not directly assessed. It underpins the professional discussion and therefore should not be marked by the EPAO. EPAOs should review the portfolio of evidence in preparation for the professional discussion but are not required to provide feedback after this review of the portfolio.

End-point assessment methods

Assessment method 1: Observation and questioning

(This assessment method has 2 components.)

Assessment method 1 component 1: Observation

Overview

An observation with questioning involves an independent assessor observing an apprentice undertaking work as part of their normal duties in the workplace and asking questions. This allows for a demonstration of the KSBs through naturally occurring evidence. The observation must be of an apprentice completing their usual work and simulation is not permitted. Apprentices must be observed by the independent assessor completing work under normal working conditions.

The independent assessor will ask questions in relation to KSBs that have not been observed although these should be kept to a minimum.

The rationale for this assessment method is:

- it is a method that reflects the practical nature of the industry
- it assesses KSBs that need to be directly observed to make a valid judgement on competence
- it provides a synoptic method of assessment
- it provides a cost-effective assessment, as it makes use of the apprentice's employer's workplace, equipment and resources
- apprentices are undergoing assessment in the workplace using equipment and tools that they are familiar with; this should allow the apprentice to perform at their best

Delivery

The observation should take place in the apprentice's normal workplace, using equipment and machinery that they are familiar with. The independent assessor must assess the apprentice against the KSBs assigned to this assessment method.

The EPAO must arrange for the observation to take place, in consultation with the employer. It is envisaged that the observation and questioning, professional discussion (assessment method 3) and questioning relating to the project (assessment method 2) will all typically take place on the same day.

Independent assessors must observe the apprentice on a one-to-one basis, to allow for quality and rigor.

The observation and questioning must take 2.5 hours in total (2 hours for the observation and 30 minutes for the questioning). The independent assessor has the discretion to increase the time of each component by up to 10%, to allow the apprentice to complete a task at the end of the assessment or to respond to a question.

The observation may be split into discrete sections held over a maximum of one working day. The length of a working day is typically considered to be 7.5 hours. There may be breaks during the observation to allow the apprentice to move from one location to another. EPAOs must manage

invigilation of apprentices during breaks in order to maintain security of the assessment in line with their malpractice policy.

The independent assessor must provide apprentices with information on the format of the observation with questions, including the timescales they will be working to, before the start of the observation. This will not contribute towards the assessment time. The independent assessor must be unobtrusive whilst conducting the observation.

The following activities must be observed during the observation. These are common to all employers:

- selection of materials and equipment to meet product specification
- setting up of work area
- engagement with colleagues to identify work requirements
- select and use a range of machinery, equipment and/or tools
- restoring the work area on completion of work
- maintaining equipment

Assessment method 1 component 2: Questioning

Questions must be asked after the observation is complete. Questioning should take 30 minutes. The independent assessor has the discretion to increase the duration by up to 10% to allow the apprentice to respond to a question.

The independent assessor should ask a minimum of 6 questions. The purpose of the questioning is to assess underpinning KSBs. The questions must be open questions and the independent assessor may use a combination of self-generated questions and those from a pre-written question bank designed by the EPAO. Independent assessors may ask follow-up questions where clarification is required.

KSBs observed, and answers to questions, must be documented by the independent assessor.
The independent assessor will make all grading decisions.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits/re-takes.

Venue

The observation must take place in the apprentice's employer's premises, under normal working conditions. The employer is responsible for ensuring the necessary materials and equipment/tools are available to the apprentice. Questioning must take place in a quiet room, free from distractions or external interference e.g. from colleagues or customers.

Supporting material

EPAOs will create and set open questions to assess KSBs mapped to this assessment method. Each EPAO must develop a question bank of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure the questions they contain are fit for purpose. Independent assessors must use the question bank as a source for questioning and are expected to use their professional judgement to tailor those questions appropriately. Independent assessors are responsible for generating suitable follow-up questions in line with the EPAOs training and

standardisation process. The questions relating to underpinning KSBs must be varied yet allow assessment of the relevant KSBs.

EPAOs must produce the following material to support this assessment method:

- Observation specifications: They should set out a number of examples of the type of activity that the independent assessor may wish to observe.
- Question bank
- Assessment recording documentation
- Guidance for apprentices and employers
- Grading guidance
- Marking materials

Assessment method 2: Project, report and questioning

(This assessment method has 3 components.)

Overview

The project and report are completed after the apprentice has gone through the gateway.

The project should be designed to ensure that the apprentice's work meets the needs of the business, is relevant to their role and allows the relevant KSBs to be demonstrated for the EPA. Therefore, the project's subject, title and scope will be agreed between the employer and the EPAO at the gateway. The employer will ensure it has a real business application and the EPAO will ensure it meets the requirements of the EPA (including suitable coverage of the KSBs assigned to this assessment method). The EPAO should sign-off the project title and scope to confirm its suitability prior to the project commencing. The EPAO needs to ensure that the complexity of the projects are comparable across different optional pathways.

The apprentice is also required to submit a project report alongside the project item(s) which has been produced. The third and final element of this method is the questioning, which is based on the project item(s) and report. It is envisaged that the questioning will typically take place on the same day as the observation and professional discussion.

The rationale for this assessment method is:

Whilst the occupation contains a significant amount of practical activity, this can be completed over a significant amount of time. The use of a project, completed in the workplace, will enable the apprentice to demonstrate a wide range of knowledge and skills that they have applied and the item(s) they have generated. These item(s) can be assessed based on how they meet organisational standards, tolerances and product designs.

Assessment method 2 component 1: Project

Delivery

Apprentices will conduct a project in the form of the completion of an item(s) of work which reflects the skills identified within the selected optional pathway. The project should include the manufacture of an item from start to finish, and to a standard that meets organisational requirements and standards. Below are some suggestions for projects and the EPAOs must also provide examples of projects that would cover the KSBs for the options.

Apprenticeship pathway	Potential project
Silversmithing	Make a piece of silverware that uses hallmarking quality silver. The article will incorporate hand/machine forming and decorative techniques together with joining with hard soldering.
Casting	Produce casting components made with precious alloys calculated to produce minimum porosity and structural change ready for the mounting workshop.
Stone setting	Demonstrate, using one or more items, four types of setting stones and one of those techniques can be micro setting in an item(s) of jewellery.

Mounting	Make a piece of jewellery using precious materials that includes hand/mechanical tools to form, shape, and fit with either permanent or semi-permanent methods.
Engraving	From a design or specification, transfer the detail onto a surface and engrave the decoration using the appropriate gravers to achieve the desired effect or image required.
Enamelling	Prepare surfaces and apply transparent or opaque enamel on flat, curved or domed forms. Complete the polishing of the enamel surface ready for final product polishing and finishing.
Polishing/finishing	Using appropriate materials, tool preparation, polish large or small items to a specified polished state. Complete with finishing and cleaning of the item(s).
CAD/CAM	Create a design for a piece of jewellery that has included specific sizes, dimensions and weights required for mass production or an individual item for manufacture.
Lapidary	Cut cabochons, facetted stones and engraved gemstones. Preform gemstones by grinding, dop stick method and lapping and polishing.

The apprentice will be expected to undertake work on a project under supervision of their employer during normal working hours but will be required to do so without contributions being made by anyone else to their assessed item(s).

However, there may be occasions when an apprentice is required to work collaboratively with a number of craftspeople/allied trades, assembling components made by others. In such cases, the apprentice and employer should agree upon, detail and record which components are not directly manufactured by the apprentice. The employer must ensure that if collaborative working is used during this assessment component, that the apprentice still has the opportunity to evidence all of the KSBs mapped to this assessment method**.**

The project starts after the apprentice has gone through the gateway. The typical duration of the project should be 10 weeks.

The employer should ensure the apprentice has sufficient time and the necessary resources, within this period, to plan and undertake the project.

Assessment method 2 component 2: Report

Delivery

For this component, apprentices produce a report which reflects the KSBs identified within the KSB mapping. The project should comprise both text and images which follows their manufacture of an item(s) from start to finish, and to a standard that meets organisational requirements and standards.

The report may be a paper based or electronic report that documents how they planned, produced and finished the item.

The report should achieve the following:

- Allow the context of the item(s) produced to be explained and demonstrate competence in the processes required to produce the item(s)
- Demonstrate the KSBs as mapped to this method, relevant to both the core and the chosen optional pathway
- Clearly identify where components may have been produced by other individuals. It is expected that a maximum of two components may be produced by other people.

As a minimum, all project reports will typically include:

- An introduction
- The scope of the project (as agreed at the gateway)
- Plans describing and illustrating the item that has been produced
- Details/images/video clips of the materials, tools and processes being used
- Details/images/video of the key stages of manufacture
- Problems that were encountered during manufacture
- Notes identifying where other individuals/allied trades contributed to the production of the item
- The report has a maximum word limit of 3000 words with a tolerance of 10%. This word count does not include annotations, references or diagrams/tables.

The project report must outline which elements were completed collaboratively and which elements were completed independently. The employer must sign-off the report, thereby authenticating it.

The project report must map, in an appendix, how it evidences the relevant KSBs for this assessment method.

The project report starts after the apprentice has gone through the gateway. The project report should be submitted to the EPAO after a maximum of 12 weeks from the gateway.

The apprentice should complete their project report unaided. When the project report is submitted, the apprentice and their employer must verify that the submitted report is the apprentice's own work.

The independent assessor should have at least 5 working days to review the project report prior to the questioning component taking place. The independent assessor should be allowed up to an hour prior to the questioning element of the assessment method, to review the item(s) produced as part of the project. The apprentice should have 5 workings days' notice of the questioning component.

The independent assessor will review and assess the report holistically together with the project item(s) produced in component 1 of this assessment method and the questioning in component 3 of this assessment method.

Assessment method 2 component 3: Questioning

Delivery

The final component of this assessment method is questioning. It is envisaged that the questioning will take place on the same day as the observation and professional discussion methods. Questions must be asked. The purpose of the questioning is to enable the checking of underpinning knowledge and skills.

The independent assessor must ask a minimum of 6 questions. They may ask follow-up questions where clarification is required.

The knowledge and skills that the apprentice did not have the opportunity to demonstrate with the project item(s) and/or report can instead be covered by questioning, although these should be kept to a

minimum. The evidence from the project item(s) and/or report and responses to questions will be assessed holistically.

The duration of the questioning should be 30 minutes. The independent assessor has the discretion to increase the duration by up to 10% to allow the apprentice to respond to a question.

KSBs met and answers to questions, must be recorded by the independent assessor.

The independent assessor will assess all components of this assessment method holistically.

Venue

The questioning should take place in:

- the apprentice's workplace in a quiet room free from distractions or outside interference from colleagues/customers.

Question and resource development

EPAOs will create and set open questions to assess KSBs mapped to this assessment method. Each EPAO must develop a question bank of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure the questions they contain are fit for purpose. Independent assessors must use the question bank as a source for questioning and are expected to use their professional judgement to tailor those questions appropriately. Independent assessors are responsible for generating suitable follow-up questions in line with the EPAO's training and standardisation process. The questions relating to underpinning KSBs must be varied yet allow assessment of the relevant KSBs.

EPAOs will produce specifications to outline in detail how the assessment method will operate, what it will cover and what should be assessed. It is recommended that this be done in consultation with employers. EPAOs should put in place measures and procedures to maintain the security and confidentiality of their specifications if employers are consulted. Specifications must be standardised by the EPAO.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits/re-takes.

Marking

The independent assessor will review and mark the project item(s), report and questioning in a timely manner, as determined by the EPAO, and without extending the EPA unnecessarily. Similarly, all quality control processes will also be conducted in a timely manner, as determined by the EPAO.

The independent assessor will make all grading decisions.

Supporting material

EPAOs will produce the following material to support this assessment method:

- Outline of the assessment method's requirements
- Marking materials
- Examples of projects that will demonstrate the relevant KSBs
- Suggested templates for project structure
- Assessment recording documentation
- Guidance for apprentices and employers
- Grading guidance

Assessment method 3: Professional discussion underpinned by a portfolio (This assessment method has 1 component.)

Assessment method 3 component 1: Professional discussion underpinned by a portfolio

Overview

A professional discussion is a two-way discussion which involves both the independent assessor and the apprentice actively listening and participating in a formal conversation. It is led by the apprentice and gives them the opportunity to make detailed and proactive contributions to confirm their competency across the KSBs mapped to this method.

This assessment will take the form of a professional discussion which must be appropriately structured to draw out the best of the apprentice's competence and excellence and cover the KSBs assigned to this assessment method. The professional discussion is underpinned by the portfolio which is compiled on programme.

The rationale for this assessment method is:

- it allows for assessment of KSBs that do not occur on a predictable or regular basis
- it allows for testing of responses where there are a range of potential answers that can't be tested through a multiple-choice test
- it is cost effective, as whilst seeking assurance of competence across a range of KSBs, it does not require the independent assessor to directly observe all of them thus reducing their time cost
- it provides the independent assessor with an opportunity to ask questions related to both the context and finer detail relating to the application of KSBs.

The questioning must cover the KSBs assigned to this assessment method.

Delivery

The independent assessor will conduct and assess the professional discussion. It is envisaged that the professional discussion will typically take place on the same day as the observation and questioning (assessment method 1) and the questioning related to the project (assessment method 2).

The timings for the professional discussion vary depending on the occupational option being undertaken by the apprentice due to the differing nature and content of the KSBs being assessed across each option. The total times listed below include the questioning of both the core KSBs and optional KSBs mapped to this method. The minimum number of questions asked for each option is in brackets below. Depending on the occupational option the apprentice is undertaking, the total time the professional discussion must last for:

- Silversmithing: 60 minutes (8)
- Casting: 60 minutes (8)
- Stone Setting: 40 minutes (6)
- Mounting: 40 minutes (6)
- Engraving: 40 minutes (6)
- Enamelling: 40 minutes (6)
- Polishing/Finishing: 40 minutes (6)
- CAD/CAM Processes: 60 minutes (8)
- Lapidary: 40 minutes (6)

The independent assessor has the discretion to increase the time of the professional discussion by up to 10% to allow the apprentice to complete their last answer.

During this method, the independent assessor must combine questions from the EPAO's question bank and those generated by themselves to allow tailoring to the apprentice's specific portfolio. In addition, the independent assessor may ask follow-up questions where further clarification is required to make an assessment against the grading descriptors.

Video conferencing can be used to conduct the professional discussion, but the EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided in some way.

The independent assessor must use the assessment tools and procedures that are set by the EPAO to record the professional discussion.

The independent assessor will make all grading decisions.

Venue

The professional discussion should take place in a quiet room, free from distractions and influence.

The professional discussion can take place in any of the following:

- employer's premises
- a suitable venue selected by the EPAO (for example a training provider's premises)
- remotely (if using video conferencing as mentioned above) i.e. not taking place on same day as the observation and project questioning

Other relevant information

A structured question bank must be developed by EPAOs. The 'question bank' must be of sufficient size to prevent predictability and the EPAO must review it regularly (at least once a year) to ensure that it, and its content, are fit for purpose. The questions relating to the underpinning KSBs, must be varied yet allow assessment of the relevant KSBs.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits/re-takes.

Independent assessors must be developed and trained by the EPAO in the conduct of professional discussion and reaching consistent judgement.

EPAOs will produce the following material to support this assessment method:

- Question Bank
- Assessment recording materials
- Outline of the assessment method's requirements
- Marking materials
- Guidance for apprentices and employers
- Grading guidance

Reasonable adjustments

The EPAO must have in place clear and fair arrangements for making reasonable adjustments to the assessment methods for the EPA for this apprenticeship standard. This should include how an apprentice qualifies for reasonable adjustment and what reasonable adjustments will be made. The adjustments must maintain the validity, reliability and integrity of the assessment methods outlined in this EPA plan.

Weighting of assessment methods

All assessment methods are weighted equally in their contribution to the overall EPA grade.

Grading descriptors

Assessment method 1: Observation and questioning

To achieve a pass in this assessment method, all pass criteria must be attained by the apprentice in the core section and for their chosen option.

To achieve a distinction in this assessment method, all pass and all distinction criteria must be attained by the apprentice in the core section and for their chosen option.

KSBs	Pass	Distinction
Fail – apprentices will fail the assessment method where they do not demonstrate all of the pass criteria		
CORE KSBs		
Health and Safety K1 K2 S1 S2 S22 B3	Follows correct systems, processes and organisational procedures to ensure compliance with Health & Safety and other relevant legislation; demonstrates the application of health and safety, COSHH, wider workplace policies; ensures their work area is safe and manages the risk of hazards to themselves and others, intervening where necessary. (K1, K2, S1, S2, B3) Follows the correct actions required to recognise and mitigate risk in the workplace. (S22)	Articulates a knowledge of how health and safety legislation impacts on how the business operates and the responsibilities of both the employer and employee. (K1, S1)
Tools and equipment K3 K6 S3 S6	Selects and utilises correct tools and equipment to achieve the desired finish/outcome. (K3, S3) Selects and utilises the correct powered plant or equipment for the task to achieve the desired finish/outcome. (K6, S6)	Justifies their choice and use of tools and equipment for the task explaining how this contributed to the overall quality of the finished product, explaining the consequences of using the incorrect tools or equipment during each stage of the process. (K3, S3, S6)

Designs K10 K18 S15	Selects and utilises correct tools to accurately measure size, scale and accuracy throughout the production process working within tolerances of the original design/specification. (K10, K18, S15)	Justifies their use of tools to measure tolerances for accuracy during the production process. (S15)
Materials and Processes K17 S11 S13	Selects the correct quantity of material for the task as specified within the design and specification and in accordance with organisational procedures. (S11) Organises and implements the production process to minimise waste; uses correct waste management processes. (K17, S13)	Justifies their selection of material volume, explaining how they have ensured that waste is minimized. (S11)
Communication K20 K24 S17 S19 B1 B4	Communicates effectively with colleagues to identify their requirements, using industry specific terminology to translate their needs into a product; when communicating, displays loyalty, integrity and accountability throughout and promotes the values of the organization. (K20, K24, S17, S19, B1, B4)	
Security K28 S21	Follows correct security procedures to promote their own security and that of colleagues, the organisation and its customers; ensures that security is maintained for materials and work in progress. (K28, S21)	Explains the importance of following security procedures and the potential impact of not following the appropriate procedures. (K28, S21)

OPTIONAL KSBs		
Silversmithing SSK4 SSK5 SSK7 SSS1 SSS3 SSS4 SSS9	Outlines the different tools and methods that can be used to support and hold work securely when being worked on correctly. (SSK5) Articulates the different processes that can be used to join items. (SSK7) Shapes a piece of silverware from a given design, using the correct tools, equipment and processes. (SSS1) Maintains an effective working environment. (SSS4) Follows correct procedures for using pickle safely, as well as using correct techniques/materials for preventing oxides. (SSS3) Uses abrasives, papers, powders and blocks to prepare items for polishing and finishing; Correctly removes oxides from item(s) during processing. (SSK4, SSS9)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (SSS1)
Casting CAK3 CAK4 CAK5 CAK7 CAK8 CAK13 CAK18 CAK21 CAS2 CAS3 CAS5 CAS6 CAS8 CAS9 CAS10 CAS14	Undertakes the mould making and cutting process for the material being used, checking that moulds are free from defects. (CAK3, CAS2, CAS3) Removes casting from trees using the correct equipment; follows correct processes to identify defects and describes the process to rectify defects in order to ensure viability of the wax pattern. (CAK7, CAK18, CAS14) Mixes the investment material and correctly invests the mould within its flask. (CAS9) Identifies the correct type of wax pot, temperatures, pressures and tools used to create wax trees. (CAK4, CAK5, CAK8) Prepares machinery for investment process. (CAS8)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (CAS2, CAS9, CAS10)

	Operates the furnace to load, program and run for casting. (CAK13, CAS10) Uses the correct techniques and tools to remove finished castings from the central sprue or tree, checking the quality of the wax pattern is free from defects. (CAK21, CAS5) Maintains a clean and tidy work area. (CAS6)	
Stone Setting SETK2 SETK5 SETK6 SETS4 SETS5	Uses an appropriate technique and equipment for the setting process for example using pushers, burnishers etc. (SETK2, SETK5, SETS4) Uses an appropriate technique and equipment for the successful removal of stones. (SETK6, SETS5)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (SETS4)
Mounting MK1 MK2 MK3 MS1 MS2 MS3 MS6 MS9	Selects and uses dividers, calipers, measuring gauges/devices, and measuring and marking out equipment to attain the correct dimensions for marking out to achieve the required design. (MK1, MK2, MK3, MS1, MS2, MS3) Cuts and shapes materials to the specifications set out in the design. (MS6) Uses materials economically, producing as little waste as possible. (MS9)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (MS3, MS6)
Engraving ENK4 ENS1 ENS4 ENS5	Marks out, measures materials for engraving and applies designs using hand or machine-based processes appropriate to the components of the item(s). (ENS1, ENS4) Identifies and translates customer requirements accurately. (ENK4, ENS5)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (ENS1, ENS4)
Enamelling ENAK1 ENAK2 ENAS1 ENAS2 ENAS5 ENAS6	Follows correct safe handling processes for use of chemicals, using the appropriate chemicals for the specific metal to be enamelled. (ENAK1, ENAS1)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing

	Cleans and prepares surface ready to enamel; correctly prepares the enamel prior to application. (ENAK2, ENAS2) Grinds enamel in purified water and applies wet enamel onto the product as per design requirements. (ENAS5, ENAS6)	objective. (ENAS2, ENAS5, ENAS6)
Polishing/Finishing POLK9 POLK11 POLK12 POLS1 POLS5 POLS7 POLS10	Applies correct pre-polishing processes. (POLS1) Selects tools, equipment and machinery correctly, including the appropriate polishing media, ultrasonic cleaners and chemicals and articulates how tools should be prepared. (POLK9, POLK11, POLS5, POLS7) Uses correct drying methods during polishing processes. (POLK12, POLS10)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (POLS5, POLS7)
CAD/CAM Processes CADK1 CADK6 CADK7 CADK8 CADK21 CADS1 CADS2 CADS3 CADS5 CADS15	Reads and interprets technical drawings and specifications. (CADK1, CADS1) Works effectively with colleagues to ensure that CAD designs are fit for purpose and reflective of the design intent. (CADS2) Selects correct software tools and programmes to develop production drawings and specifications which take account of the practicality of the design, the manufacturing processes being used and the properties of the material selected to achieve the required outcome. (CADK6, CADK7, CADK8, CADS3, CADS5) Applies organisational protocols for data storage, file naming and security of intellectual property. (CADK21, CADS15)	Justifies, in technical, detail the rationale for the software functions and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing objective. (CADS3, CADS5)
Lapidary LAPK5 LAPK6 LAPK7 LAPK9 LAPK10, LAPK11	Selects stones based on size, weight, colour and shape in accordance with standards required by the customer and set by the organization. (LAPS1) Interprets work documentation to correctly identify types of cut required. (LAPS2)	Justifies, in technical detail, the rationale for the tools and processes used and the sequence for the combinations or individual application of techniques to maximise and meet the manufacturing

LAPS1 LAPS2 LAPS7 LAPS8 LAPS10	Describes the tools and techniques that could be used to cleave and cut stones. (LAPK5, LAPK6, LAPK7) Stores polished stones in a manner that preserves their finish. (LAPS10) Uses correct tools, techniques and equipment, applying suitable media, to polish stones to achieve the correct finish to the specified standard. (LAPK9, LAPK10, LAPK11, LAPS7 LAPS8)	objective. (LAPK11, LAPS7, LAPS8).

Assessment method 2: Project, report and questioning

To achieve a pass in this assessment method, all pass criteria must be attained by the apprentice in the core section and for their chosen option.

NOTE: Distinction grade is not available for this method.

KSBs	Pass
Fail – apprentices will fail the assessment method where they do not demonstrate all of the pass criteria	
CORE KSBs	
Drawings, Specifications, Materials and Finishing K9 K12 K16 S8 S9 S12 S16 S20	Communicates the processes, finishes and materials required for the item(s); articulates the limitations of different design approaches. (K12, S20) Applies the correct materials, techniques, processes and finishes as required by the design/specification. (K9, S8, S9) Uses alternative materials where required. (K16, S12) Applies relevant techniques to improve the finish/accuracy of an item(s). (S16)
OPTIONAL KSBs	
Silversmithing SSK9 SSK13 SSS5 SSS10 SSS11 SSS12	Joins metal components to achieve the shape and form required. (SSS5) Uses equipment to develop work to a commercial standard through polishing, post-processing and cleaning. (SSK13, SSS11, SSS12) Prepares surfaces for polishing and finishing applying a range of polishing and finishing techniques. (SSK9, SSS10)
Casting CAK6 CAK10 CAS4 CAS7 CAS11	Assembles wax trees/patterns correctly. (CAK10, CAS7) Injects a rubber mould with wax and removes it in a manner that protects it and avoids damage or deformation. (CAK6, CAS4) Evidences the correct calculation of volumes of metal required to successfully fill a given flask. (CAS11)
Stone Setting SETK3 SETK7 SETS1 SETS6	Applies the correct setting technique suitable for the type and hardness of the stone(s) being used. (SETK3, SETS1) Completes all post-processing of set items(s) so they are finished to the standard required by the specification. (SETK7, SETS6)
Mounting MK6 MK9	Achieves the required quality of surface finish as defined within the specification and completes work without damage to the surface of the item(s). (MK9, MS8, MS10)

MS7 MS8 MS10 MS11	Describes the properties of the different materials they might work with when producing jewellery. (MK6) Achieves the correct specification requirements in regard to metal and fineness. (MS7) Prepares mount for the setting. (MS11)
Engraving ENK1 ENS2	Describes different lettering forms and layouts for inscriptions and monograms. (ENK1) Lays out scroll work and ornamental patterns correctly. (ENS2)
Enamelling ENAK8 ENAS3 ENAS8 ENAS11	Achieves the required standard of finish and enamel to the required surface effect as per the specification. (ENAK8, ENAS11) Applies the correct use of grinding and enamelling to the required grade and correct method of firing the item(s). (ENAS3, ENAS8)
Polishing/Finishing POLK1 POLK4 POLS2 POLS4	Produces items(s) with cleaned, polished finishes using a range of materials and hand/machine processes, to produce commercially acceptable finishes as per the specification. (POLK1, POLK4, POLS2, POLS4)
CAD/CAM Processes CADK5 CADK12 CADK14 CADK16 CADK18 CADS7 CADS8 CADS9 CADS11 CADS12	Creates files for, and applies, CAM/CNC processes to produce item(s) with correct scales and measurements of existing components, which meets the requirements of the specification. (CADK5, CADK12, CADK18, CADS7, CADS9) Produces post processed models to the required standard. (CADK16, CADS11) Checks items have adequate supports and that the model was orientated correctly to ensure an optimal outcome. Removes the support and build lines in preparation for casting. (CADK14, CADS8, CADS12)
Lapidary LAPK3 LAPK12 LAPS4 LAPS5 LAPS9	Produces items using saws and abrasion techniques appropriate to the hardness of the stone type used. (LAPK3, LAPS4, LAPS5) Assesses finished Item(s) against the organisational/specification standard. (LAPK12, LAPS9)

Assessment method 3: Professional discussion

To achieve a pass in this assessment method, all pass criteria must be attained by the apprentice in the core section and for their chosen option.

To achieve a distinction in this assessment method, all pass and all distinction criteria must be attained by the apprentice in the core section and for their chosen option.

KSBs	Pass	Distinction
Fail – apprentices will fail the assessment method where they do not demonstrate all of the pass criteria		
CORE KSBs		
Tools and equipment K4 K5 K7 K8 S4 S5 S7	Describes how they have correctly and safely maintained hand tools/equipment and powered plant/equipment to ensure their effectiveness and describes how they rectified any defects. (K4, K7, S4, S7) Explains the process they followed when purchasing hand tools/equipment and powered plant/equipment. (K5, K8, S5)	Explains the consequences of not maintaining tools, equipment and powered plant. (K4, K7, S4, S7) Justifies their choice of hand tools/equipment or powered plant/equipment purchased. (K5, K8, S5)
Materials and Processes K13 K14 K15 K26 S14	Describes the physical properties and limitations of different materials used and their relative financial value. (K15) Describes where different materials used in manufacture are sourced from, how to correctly obtain materials and how work can be accurately priced. (K13, K14, K26) Explains the waste management process they use in their workplace. (S14)	Explains the decision-making process used to identify and source materials. (K13) Describes the impact that effective waste management can have upon the success of the organization. (S14)
Communication K11 K23 K25 S10 S18 B2	Describes when they have communicated, showing courtesy and respect, the design requirements to colleagues using organisational methods. (K11, K23, S10, B2) Describes how different techniques, design requirements, processes and finishes can be communicated to customers. (K25) Describes when and how they communicated different options that might be possible to produce an item, to a customer. (S18)	Justifies method of communication used with colleagues relating to design requirements. (K11, S10) Justifies method of communication to a customer relating to different possible options for their finished product. (S18)

CPD, Team work and Allied Trades K19 K21 K22 K27 B5	Describes the importance of self-reflection to assist with the development of skills and how they are committed to continuous development of self and team, with reference to improvements to systems and processes. (K19, B5) Lists the roles of differing team members within the organisation and explains how their own work relies upon and impacts on the work of others. (K21) Lists the different skill sets available within the organisation and the services that are outsourced to other individuals and organisations. (K22) Identifies where information regarding new and emerging techniques and materials can be sought. (K27)	Describes when and why services might be outsourced to other individuals/organisations, and identifies the advantages and disadvantages of taking this action. (K22)
OPTIONAL KSBs		
Silversmithing SSK1 SSK2 SSK3 SSK6 SSK8 SSK10 SSK11 SSK12 SSS2 SSS6 SSS7	Names the different shaping and forming techniques and the tools/equipment that may be utilized. (SSK1, SSK2) Describes the process they used when annealing metal when they have shaped and formed materials. (SSK3, SSS2) Describes the different types of solder and related fluxes and the use of jigs, binding wire, “stiches” and other fixtures used when soldering and how the different properties of metals impact on the joining method. (SSK6, SSS6, SSS7) Lists the different finishes that can be applied to silverware and describes how to apply polishing and finishing techniques; makes reference to the principle of part polishing and how this is achieved when assembling an item. (SSK8, SSK11, SSK12) Describes the use of plating and platination. (SSK10)	Justifies method of joining that takes into account the types of metal and joining process. (SSK6, SSS6, SSS7) Describes the impact of not adhering to the correct annealing process on the shape of metals. (SSS2)

Casting CAK1 CAK2 CAK9 CAK11 CAK12 CAK14 CAK15 CAK16 CAK17 CAK19 CAK20 CAS1 CAS12 CAS13	Uses a range of mould making skills and describes the limitations of different materials. (CAK1, CAK2, CAS1) Describes the stages of the investment process including the importance of the burnout cycle. (CAK11, CAK12) Describes when they have cast metal into flasks by preparing both the metal and machinery. Explains various casting processes on different metals including the use and purpose of cloaking gases, over-pressure and vacuum and the basic principles of metal flow, solidification and spruing. (CAK9, CAK14, CAK15, CAS12) Explains the processes, including the required temperatures, that are needed to ensure casts are fully formed. (CAK16, CAK17) Describes how they used appropriate equipment when using quench flasks to remove the investment and how and when jet washing could be used. (CAK19, CAK20, CAS13)	Explains the impact of using the wrong type of materials for mould making. (CAK1, CAS1) Justifies their use of equipment when using quench flasks and removing investment material. (CAK19, CAS13)
Stone Setting SETK1 SETK4 SETK8 SETS2 SETS3	Describes when they prepared an item for setting by marking out and/or opening out the item to be set to accommodate the precious gems. (SETS2) Describes the different types of stone setting used in industry. (SETK1) Describes techniques they have used to create bearers or grains prior to setting the piece. (SETK4, SETS3) Explains the use of burnishers to deburr items post-setting. (SETK8)	Explains why the different types of stone setting are used throughout industry with reference to time and quality and explains the implications of using an incorrect method of setting. (SETK1) Justifies the methods used to mark out and/or open out the item to be set to accommodate the precious gems. (SETS2)
Mounting MK4 MK5 MK7 MK8 MS4 MS5	Describes, using the correct terminology, how they transferred the design and drawing requirements to metal and the different tools that can be used to achieve this. (MK4, MK5, MS4) Describes when they marked out positions on material for cutting, shaping and drilling to the required specification. (MS5)	Explains why it is important to mark out positions on material for cutting, shaping and drilling to the required specification and explains the implications of not completing this accurately. (MS5)

	Explains how the different melting points of non-ferrous metals and precious metals, as well as the ductility and malleability of metals, affects mounting. (MK7, MK8)	Justifies their use of method to mark out cutting positions on material. (MS5)
Engraving ENK2 ENK3 ENK5 ENK6 ENK7 ENK8 ENS3 ENS6 ENS7	Explains how they effectively communicated the various techniques surrounding engraving to customers and how the engraving can be accurately priced. (ENK5, ENK6, ENS6) Explains how associated crafts (e.g. silversmithing, enamelling, metal spinning, polishing, stone mounting etc) impact on the completion of the engraved work. (ENK3) Describes how they produced engravings using a range of engraved surfaces, materials, designs, surface types, standard and advanced techniques (including cutting, seal engraving, carving, piercing, inlay and overlay). (ENS3) Describes how they implemented repair techniques including the use of burnishers, etc. (ENS7) Lists where information regarding new and emerging engraving techniques can be sought. (ENK7) Lists the key differences between repair, restoration, conservation and reconstruction and describes the process of repairing engraved items damaged during the engraving process. (ENK2, ENK8)	Explains the impact of incorrectly choosing the following options: repair/restore/conserve/reconstruct. (ENK2, ENK8) Justifies their choice of materials and techniques to produce the design and finish required. (ENS3)
Enamelling ENAK3 ENAK4 ENAK5 ENAK6 ENAK7 ENAK9 ENAK10 ENAS4 ENAS7 ENAS9 ENAS10 ENAS12	Describes the methods they have used to process enamel to the required surface finish (matt, shiny or satin) including: drying ready for application (if using dry sifting) and dusting enamel onto a product to the appropriate level. (ENAK5, ENAS4, ENAS7, ENAS10) Explains the process they followed when setting the kiln to the correct temperature to vitrify the enamel and the process for	Justifies their choice of methods used to correct defects and the implications of using a different method. (ENAK9, ENAK10) Justifies their choice of temperature setting for the kiln and how they have adjusted the enameling process to achieve different surface. (ENAS9, ENAS10)

	using other firing methods including gas torch, batch and firing in an electric conveyor furnace. (ENAK7, ENAS9) Describes how the grade of enamel can be assessed and the process to follow to apply well laid enamel. (ENAK3, ENAK4) Explains the process they take to identify and correct errors and defects including pin holes, surface dirt and cracks and how enamel can be re-worked prior to firing. (ENAK6, ENAK9, ENAK10, ENAS12)	
Polishing/Finishing POLK2 POLK3 POLK5 POLK6 POLK7 POLK8 POLK10 POLK13 POLK14 POLS3 POLS6 POLS8 POLS9	Describes how they have finished work using a range of equipment, compounds and chemicals, and describes the sequences for the removal of fire stain, preliminary abrasive polishing, pickling, barrelling, finishing, chemical stripping, bright polishing and finishing. (POLK2, POLS3) Describes when they have used polishing/finishing techniques including: preparing and dressing mops and bobs, preparing and using ultra-sonic cleaner and solution, preparing and using plating equipment. (POLS6, POLS8, POLS9) Describes the differing polishing materials that may be used and their associated properties. (POLK3, POLK5) Describes when to use specific compounds including abrasive, polishing, finishing and matting as well as polishing tools and equipment including mops, felt bobs, brushes and composition wheels; describes when to use polishing equipment including hand and machine polishing. (POLK6, POLK7, POLK8) Explains the function of materials used in barrel polishing. (POLK10) Describes how plating equipment should be used and how to measure micron thickness of the product when plating. (POLK13, POLK14)	Describes the impact of incorrectly measuring the micron thickness of the product when plating. (POLK13, POLK14) Identifies the advantages and disadvantages of using specific compounds and polishing tools and when they are appropriate for the work being completed. (POLK6, POLK7, POLK8)

CAD/CAM Processes CADK2 CADK3 CADK4 CADK9 CADK10 CADK11 CADK13 CADK15 CADK17 CADK19 CADK20 CADS4 CADS6 CADS10 CADS13 CADS14	Explains how they assess the functionality and practicality of the design including nature of materials, weights and thicknesses; lists which materials are available and suitable for CAM processing. (CADK4, CADK13, CADS4) Describes how to communicate with designers to be able to interpret what the designer is seeking to achieve. (CADK2, CADK3) Describes how to use component libraries and other software tools that support effective design and production; describes how to create forms and shapes relevant to the trade specialisation; lists different forms of output e.g. machining files, SLA, STL., etc. (CADK9, CADK10, CADK11) Describes when they used rendering packages for presentation purposes. (CADS6) Discusses the limitations, strengths and weaknesses of the available CAM solutions. (CADK15) Describes how they checked on the successful curing of 3D printed resin models. (CADS10) Describes how they applied software functions to account for shrinkage in the manufacturing process and describes the impact shrinkage and warping has on items. (CADK19, CADK20, CADS13) Explains when they have used measuring equipment to assess whether the item has been built to acceptable tolerances and to scale. (CADS14) Describes why models may require curing and the different methods by which this can be achieved. (CADK17)	Explains the possible impacts of incorrectly measuring tolerances/scale. (CADS14) Justifies their choice of software and digital tools to produce both the aesthetics and functionality of the design. (CADS4)

Lapidary LAPK1 LAPK2 LAPK4 LAPK8 LAPS3 LAPS6	Describes the techniques they used to mark areas and facets to be cut, using the correct terminology. (LAPK4, LAPS3) Describes different types of stones used within the jewellery and creative industry, including precious and semi-precious, and their gemmology. (LAPK1, LAPK2) Describes how they measured and assessed the effectiveness of the cut of precious gems using the correct techniques. (LAPK8, LAPS6)	Explains the possible impacts of incorrectly measuring the cut of precious gems and the impacts of using incorrect techniques. (LAPK8, LAPS6) Justifies the techniques used when marking areas and facets to be cut against other techniques. (LAPK4, LAPS3)

Overall EPA grading

All assessment methods are weighted equally in their contribution to the overall EPA grade.

Apprentices must gain at least a pass in all methods to gain a pass overall. Apprentices must gain a distinction in assessment method 1: observation and questioning and a distinction in assessment method 3: professional discussion as well as a pass in assessment method 2: project, report and questioning to gain a distinction overall. A fail in any of the assessment methods will result in a fail overall. NOTE: There is no distinction grade available for assessment method 2 (project, report and questioning).

Grades from individual assessment methods should be combined in the following way to determine the grade of the EPA as a whole:

Assessment method 1 Observation and questioning	Assessment method 2 Project, report and questioning	Assessment method 3 Professional discussion	Overall grading
Fail	Pass	Any grade	Fail
Any grade	Fail	Any grade	Fail
Any grade	Pass	Fail	Fail
Pass	Pass	Pass	Pass
Pass	Pass	Distinction	Pass
Distinction	Pass	Pass	Pass
Distinction	Pass	Distinction	Distinction

Any grade = fail, pass, or distinction

Re-sits and re-takes

Apprentices who fail one or more assessment method will be offered the opportunity to take a re-sit or a re-take at the employer's discretion. A re-sit does not require further learning, whereas a re-take does.

Apprentices should have a supportive action plan to prepare for the re-sit or re-take. The apprentice's employer will need to agree that either a re-sit or re-take is an appropriate course of action. An apprentice who fails an assessment method, and therefore the EPA in the first instance, will be required to re-sit or re-take any failed assessment methods only.

The timescale for a re-sit/re-take is agreed between the employer and EPAO. A re-sit is typically taken within 4 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 4 months of the EPA outcome notification.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to distinction.

Where any assessment method has to be re-sat or re-taken, the apprentice will be awarded a maximum EPA grade of pass, unless the EPAO determines there are exceptional circumstances requiring a re-sit or re-take.

Roles and responsibilities

Role	Responsibility
Apprentice	As a minimum, apprentices should: • participate in and complete on-programme training to meet the KSBs as outlined in the occupational standard for a minimum of 12 months • undertake 20% off-the-job training as arranged by the employer and EPAO • understand the purpose and importance of EPA • undertake the EPA including meeting all gateway requirements
Employer	As a minimum, employers should: • select the EPAO and training provider • work with the training provider (where applicable) to support the apprentice in the workplace and to provide the opportunities for the apprentice to develop the KSBs • arrange and support a minimum of 20% off-the-job training to be undertaken by the apprentice • decide when the apprentice is working at or above the occupational standard and so is ready for EPA • ensure that all supporting evidence required at the gateway is submitted in accordance with this EPA plan including applicable company procedures • remain independent from the delivery of the EPA • confirm arrangements with the EPAO for the EPA (who, when, where) in a timely manner (including providing access to any employer-specific documentation as required, for example company policies) • ensure that the EPA is scheduled with the EPAO for a date and time which allow appropriate opportunity for the KSBs to be met • ensure the apprentice is well prepared for the EPA • ensure the apprentice is given sufficient time away from regular duties to prepare for and complete all post-gateway elements of the EPA, and that any required supervision during this time (as stated within this EPA plan) is in place • where the apprentice is assessed in the workplace, ensure that the apprentice has access to the resources used on a daily basis • pass the certificate to the apprentice
EPAO	As a minimum, EPAOs should: • conform to the requirements of this EPA plan and deliver its requirements in a timely manner • conform to the requirements of the Register of End-Point Assessment Organisations (RoEPAO) • conform to the requirements of the external quality assurance provider (EQAP) for this apprenticeship standard • understand the occupational standard

	• make all necessary contractual arrangements, including agreeing the price of the EPA • develop and produce assessment materials including specifications and marking materials (for example mark schemes, practice materials, training material) • appoint suitably qualified and competent independent assessors • appoint administrators (and invigilators where required) to administer the EPA as appropriate • provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading • provide adequate information, advice and guidance documentation to enable apprentices, employers and training providers to prepare for the EPA • arrange for the EPA to take place, in consultation with the employer • where the apprentice is not assessed in the workplace, ensure that the apprentice has access to the required resources and liaise with the employer to agree this if necessary • develop and provide appropriate assessment recording documentation to ensure a clear and auditable process is in place for providing assessment decisions and feedback to all relevant stakeholders • have no direct connection with the apprentice, their employer or training provider. In all instances, including when the EPAO is the training provider (i.e. HEI), there must be no conflict of interest • have policies and procedures for internal quality assurance (IQA), and maintain records of regular and robust IQA activity and moderation for external quality assurance (EQA) purposes • deliver induction training for independent assessors, and for invigilators and/or markers (where used) • undertake standardisation activity on this apprenticeship standard for all independent assessors before they conduct an EPA for the first time, if the EPA is updated and periodically as appropriate (a minimum of annually) • manage invigilation of apprentices in order to maintain security of the assessment in line with the EPAO's malpractice policy • verify the identity of the apprentice being assessed • use language in the development and delivery of the EPA that is appropriate to the level of the occupational standard • provide details of the independent assessor's name and contact details to the employer • have and apply appropriately an EPA appeals process • request certification via the Apprenticeship Service upon successful achievement of the EPA
Independent assessor	As a minimum, independent assessors should: • have the competence to assess the apprentice at this level and hold any required qualifications and experience in line with the requirements of the independent assessor as detailed in the IQA section of this EPA plan • understand the occupational standard and the requirements of this EPA

	• have, maintain and be able to evidence up-to-date knowledge and expertise of the subject matter • deliver the end-point assessment in-line with the EPA plan • comply with the IQA requirements of the EPAO • have no direct connection or conflict of interest with the apprentice, their employer or training provider; in all instances, including when the EPAO is the training provider (i.e. HEI) • attend induction training • attend standardisation events when they begin working for the EPAO, before they conduct an EPA for the first time and a minimum of annually on this apprenticeship standard • assess each assessment method, as determined by the EPA plan, and without extending the EPA unnecessarily • assess against the KSBs assigned to each assessment method, as shown in the mapping of assessment methods and as determined by the EPAO, and without extending the EPA unnecessarily • make all grading decisions • record and report all assessment outcome decisions, for each apprentice, following instructions and using assessment recording documentation provided by the EPAO, in a timely manner • use language in the development and delivery of the EPA that is appropriate to the level of the occupational standard • mark open (constructed) test answers accurately according to the EPAO's mark scheme and procedures
Training provider	As a minimum, training providers should: • work with the employer and support the apprentice during the off-the-job training to provide the opportunities to develop the knowledge, skills and behaviours as listed in the occupational standard • conduct training covering any knowledge, skill or behaviour requirement agreed as part of the Commitment Statement (often known as the Individual Learning Plan). • monitor the apprentice's progress during any training provider led on-programme learning • advise the employer, upon request, on the apprentice's readiness for EPA • remain independent from delivery of the EPA. Where the training provider is the EPA (i.e. a HEI) there must be procedures in place to mitigate against any conflict of interest

Internal Quality Assurance (IQA)

Internal quality assurance refers to the requirements that EPA organisations must have in place to ensure consistent (reliable) and accurate (valid) assessment decisions. EPA organisations for this EPA must:

- appoint independent assessors who have knowledge of the following occupational areas: Experience of working in and applying the skills and knowledge described in both the core section and the optional sections of the standard which they have been assigned to assess.
- appoint independent assessors who have recent relevant experience of the occupation/sector at least one level above the apprentice gained in the last three years or significant experience of the occupation/sector.
- appoint independent assessors who are competent to deliver the end-point assessment and who meet the following minimum requirements:
    - Independent assessors must have been working at or above the level of the standard level for at least 3 years
    - Hold occupational experience and knowledge related to the optional pathways they will be assessing.
    - Demonstrate regular continuing professional development with at least 2 days per year relating to the jewellery, silversmithing or allied trades best practice and a minimum of 2 days relating to assessment best practice.
    - Hold a recognised current workplace assessment qualification or be working towards one.
- provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading
- have robust quality assurance systems and procedures that support fair, reliable and consistent assessment across the organisation and over time
- operate induction training and standardisation events for independent assessors when they begin working for the EPAO on this standard and before they deliver an updated assessment method for the first time
- ensure independent assessors attend standardisation events on an ongoing basis and at least once per year

Value for Money

Affordability of the EPA will be aided by using at least some of the following practice:

- using an employer's premises

It is envisaged that the observation and questioning, professional discussion and questioning component of the project will all typically take place on the same day.

Professional body recognition

Professional body recognition is not relevant to this occupational apprenticeship.

Mapping of knowledge, skills and behaviours (KSBs)

Assessment method 1: Observation and questioning

CORE

Knowledge
K1 Relevant H & S legislation related to their role and that of the wider workplace
K2 The systems, processes and organisational procedures used to ensure compliance with H & S and other relevant legislation.
K3 The purpose and use of different hand tools and equipment
K6 The purpose and use of different powered plant and equipment.
K10 How to measure, interpret size and scale
K17 The importance of reducing waste and the methods used for managing it.
K18 The importance of working to tolerances against the original design/specification
K20 The industry specific terminology used to describe materials, processes and finishes
K24 How customer requirements can be identified
K28 The organisational procedures which ensure the security of materials, work in progress, employees and the general public.

Skills
S1 Demonstrate the application of health and safety, COSHH and other policies within the workplace
S2 Demonstrate an understanding of workplace hazards and other areas of legislative non-compliance and how these can be addressed
S3 Select and utilise tools and equipment to achieve the desired finish/outcome
S6 Select and utilise the correct powered plant or equipment for the task to achieve the desired finish/outcome
S11 Select the correct quantity of material for the task as specified within the design and specification and in accordance with organisational procedures
S13 Organise and implement the production process to minimise waste.
S15 Select and utilise tools to measure tolerances and accuracy throughout the production process.

S17 Communicate with colleagues in a manner that is clear, indicates understanding of the desired outcome and which promotes teamwork.
S19 Translate customer requirements.
S21 Follows procedures to promote their own security and that of colleagues and the organisation
S22 Takes action to recognise and mitigate risk.

Behaviours
B1 Embrace and promote the values of the organisation
B3 Take ownership and responsibility for their role and working area, including other team members where appropriate
B4 Display loyalty, integrity and accountability to the organisation

OPTIONS

Silversmithing

Silversmithing (SS): Knowledge
SSK4 Removal of oxides, etc. from the item during processing.
SSK5 Different processes used to join items
SSK7 How to support and hold work during the joining process.

Silversmithing (SS): Skills
SSS1 Demonstrate the processes required to shape a piece of silverware from a given design, including the tools and equipment that would be required.
SSS3 Demonstrate an understanding of the use of pickle safely and oxide prevention techniques and materials
SSS4 Maintain an effective working environment
SSS9 Use abrasives, papers, powders and blocks to prepare items for polishing and finishing.

Casting

Casting (CA): Knowledge
CAK3 The mould making and cutting process related to each material.

CAK4 The types of wax pot that may be employed, both manual and automated
CAK5 The working temperature and pressure of molten wax.
CAK7 The identification and prevention of defects that could affect the viability of the wax pattern.
CAK8 The tools required to build wax trees
CAK13 The operation of the furnace
CAK18 Identifying common defects and how to rectify them.
CAK21 Techniques and tools required to remove the finished castings from the central sprue or tree.

Casting (CA): Skills
CAS2 Demonstrate relevant cutting techniques
CAS3 Checks that moulds are free from defects.
CAS5 Check on the quality to ensure that the wax pattern is free from defects
CAS6 Maintain a clean and tidy work area
CAS8 Prepare machinery for the investment process.
CAS9 Mix the investment material and invest the mould within its flask
CAS10 Load, program and run the furnace for casting.
CAS14 Remove casting from trees using appropriate equipment.

Stone Setting

Stone Setting (SET): Knowledge
SETK2 The tools and techniques required to successfully complete the task including those used for marking out, the use of burrs, drills and fazes.
SETK5 The correct process for setting stones using pushers, burnishers, etc.
SETK6 The correct process for removing stones using the appropriate equipment

Stone Setting (SET): Skills
SETS4 Demonstrate a range of setting processes using the correct techniques.
SETS5 Demonstrate the successful removal of precious gems using the correct techniques.

Mounting

Mounting (M): Knowledge
MK1 How to measure dimensions accurately
MK2 How to transfer the design to the item and mark out.
MK3 How to translate the design onto materials

Mounting (M): Skills
MS1 Use dividers and calliper and measuring gauges for marking out.
MS2 Use measuring devises to attain correct dimensions.
MS3 Select and use appropriate measuring and marking equipment
MS6 Cut and shape material to the specifications set out in the design.
MS9 Material is used economically, producing as little waste as possible.

Engraving

Engraving (EN): Knowledge
ENK4 How customer requirements can be identified.

Engraving (EN): Skills
ENS1 Mark out and measure materials for engraving
ENS4 Apply designs using hand or machine-based processes.
ENS5 Translate customer requirements.

Enamelling

Enamelling (ENA): Knowledge
ENAK1 The appropriate chemicals to use to prepare the specific metal to be enamelled.
ENAK2 The methods of preparing the enamel prior to application

Enamelling (ENA): Skills
ENAS1 Follow correct safe handling processes for use of chemicals.
ENAS2 Clean and prepare the surface ready to enamel.

ENAS5 Grind enamel in purified water for applying wet enamel onto the product as per design requirements.
ENAS6 Apply wet enamel onto the product as per design requirements.

Polishing/Finishing

Polishing/Finishing (POL): Knowledge
POLK9 How tools should be prepared
POLK11 How to appropriately use ultra-sonic cleaner and chemicals.
POLK12 The use of different drying methods in the polishing processes.

Polishing/Finishing (POL): Skills
POLS1 Apply the appropriate pre-polishing processes
POLS5 Select the appropriate hand or machine polishing tools, equipment and machinery.
POLS7 Select and use appropriate polishing media.
POLS10 Apply drying methods within the polishing process.

CAD/CAM Processes

CAD/CAM Processes (CAD): Knowledge
CADK1 How to read a working drawing, industry standard terminology and descriptors around finishes, etc.
CADK6 How to assess the practicality of a design in regard to its production
CADK7 Relevant industry specific software packages
CADK8 The differences between 2D, 2.5D and 3D software programmes.
CADK21 The protocols for storage and security of data and intellectual property

CAD/CAM Processes (CAD): Skills
CADS1 Demonstrate an understanding of how to read technical drawings and specifications.
CADS2 Work effectively with colleagues to ensure that CAD designs are fit for purpose and reflective of the design intent.

CADS3 Develop production drawings and specifications which take account of the manufacturing processes being used and the properties of the material selected.
CADS5 Selecting the correct software tools to achieve the required outcome.
CADS15 Apply organisational protocols around data storage, file naming and security.

Lapidary

Lapidary (LAP): Knowledge
LAPK5 Tools and techniques required to mark and set the cuts required to create the shape and/or facets required
LAPK6 Methods used to cleave and cut stones
LAPK7 Tools used to cut stones and how they should be set up for use
LAPK9 Tools and used to achieve a range of finishes
LAPK10 Media used to achieve differing finishes
LAPK11 Process for polishing different types of stones once cut

Lapidary (LAP): Skills
LAPS1 Select stones based on size, weight, colour and shape in accordance with standards required by the customer and set by the organisation
LAPS2 Interpret work documentation to identify types of cut required
LAPS7 Set up and use correct polishing equipment
LAPS8 Apply suitable media to achieve specified standard
LAPS10 Store polished stones in a manner that preserves their finish

Assessment method 2: Project, report and questioning

CORE

Knowledge
K9 How to read working drawings and specifications, including industry standard descriptions and symbols used to describe processes and finishes
K12 The limitations of different design approaches
K16 Alternative materials that may be used/substituted.

Skills
S8 Translate designs into physical items from working drawings to a specification
S9 Identify the material required to produce an item based upon a given specification
S12 Identify alternative materials that could be substituted.
S16 Implement actions to improve the finish/accuracy of the item.
S20 Communicate the various techniques, processes and finishes related to the item(s)

OPTIONS

Silversmithing

Silversmithing (SS): Knowledge
SSK9 How surfaces should be prepared prior to polishing and finishing.
SSK13 The importance of cleaning the item prior to and after polishing.

Silversmithing (SS): Skills
SSS5 Demonstrate the use of suitable joining techniques in the successful completion of the task.
SSS10 Demonstrate a range of polishing and finishing techniques
SSS11 Use lathe, and/or other suitable equipment to polish work to the required standard.
SSS12 Post-process work to a commercial standard

Casting

Casting (CA): Knowledge
CAK6 The removal of wax patterns from moulds avoiding damage or deformation.
CAK10 How wax patterns are assembled

Casting (CA): Skills
CAS4 Inject rubber mould with wax to a consistent standard and remove from mould
CAS7 Create a functional wax tree ready for investing.
CAS11 Calculate the volume of metal required to successfully fill a given flask.

Stone Setting

Stone Setting (SET): Knowledge
SETK3 The different levels of hardness of different stone types and its impact on the type of setting used
SETK7 The process for finishing items once these are set

Stone Setting (SET): Skills
SETS1 Select the correct setting technique suitable for the type and hardness of the stone(s) being used
SETS6 Complete post-processing of set items to a standard that meets the requirement of the employer

Mounting

Mounting (M): Knowledge
MK6 The properties of different materials used in the production of jewellery.
MK9 The required level of metal surface finishing required prior to final polishing.

Mounting (M): Skills
MS7 Select the correct metal and fineness to produce the required item.
MS8 Task is completed without damage to the surface.
MS10 Achieve an acceptable surface level finish on precious metals.
MS11 Ensure that the mount is adequately prepared for setting.

Engraving

Engraving (EN): Knowledge
ENK1 Know the various types of letter forms and layouts for inscriptions and monograms

Engraving (EN): Skills
ENS2 Lay out scroll work and ornamental patterns.

Enamelling

Enamelling (ENA): Knowledge
ENAK8 The finishing methods that may be applied to enamelled products.

Enamelling (ENA): Skills
ENAS3 Grind and wash the enamel to the required grade.
ENAS8 Select the appropriate method of firing the product.
ENAS11 Finish the enamel to the required surface effect.

Polishing/Finishing

Polishing/Finishing (POL): Knowledge
POLK1 How surfaces can be cleaned and prepared correctly
POLK4 The appropriate hand or machine polishing processes to achieve required finishes.

Polishing/Finishing (POL): Skills
POLS2 Produce a commercially acceptable finish on completed work
POLS4 Polish and finish work made from a range of materials.

CAD/CAM Processes

CAD/CAM Processes (CAD): Knowledge
CADK5 The importance of accurate measurement of existing components, e.g. stones
CADK12 How parts can be produced using CAD and CAM processes

CADK14 The role of support materials and supports in the CAM process.
CADK16 The post-processing of CAM models
CADK18 How to assess the design is to scale and meets the requirements of the design.

CAD/CAM Processes (CAD): Skills
CADS7 Create appropriate files for CAM usage.
CADS8 Check that CAM parts have adequate supports and that the model is orientated correctly to ensure an optimal outcome.
CADS9 Demonstrate the application of an appropriate CAM and CNC processes.
CADS11 Produce post-process models.
CADS12 Remove support and build lines in preparation for casting

Lapidary

Lapidary (LAP): Knowledge
LAPK3 Different levels of hardness of different stone types and its impact on the approaches used to cut and shape the stone
LAPK12 The organisational standards for the finishes required

Lapidary (LAP): Skills
LAPS4 Cut stones using saws
LAPS5 Cut stones using abrasion techniques
LAPS9 Assess as to whether the required standard has been achieved

Assessment method 3: Professional discussion

CORE

Knowledge
K4 The maintenance of hand tools and equipment.
K5 How to purchase hand tools and equipment.
K7 The maintenance of powered plant and equipment.
K8 How to purchase powered plant and equipment
K11 How to communicate design requirements to colleagues and clients
K13 Where different materials used in manufacture are sourced from
K14 The organisational procedures to follow when obtaining materials
K15 The physical properties and limitations of different materials used and their relative financial value
K19 The importance of self-reflection to assist with the development of skills
K21 The roles of differing team members within the organisation and an understanding of how their own work relies upon and impact on the work of others
K22 The different skill sets available within the organisation and those services that are outsourced to other individuals and organisations
K23 The organisational methods used to communicate with customers
K25 How different techniques, processes and finishes can be communicated to customers.
K26 How work can be accurately priced
K27 Where information regarding new and emerging techniques and materials can be sought

Skills
S4 Maintain the effectiveness of hand tools and rectify any defects should they arise
S5 Purchase or order appropriate tools and equipment
S7 Maintain the effectiveness of the powered plant and/or equipment and rectify defects and damage
S10 Communicate requirements of the design to colleagues using industry standard language

S14 Demonstrate a wider understanding of waste management within the workplace.
S18 Communicate with the customer different options that may be possible to produce the item

Behaviours
B2 Treat team, customers and other stakeholders with courtesy and respect
B5 Commit to continuous development of self and team, including improvements to systems and processes

OPTIONS

Silversmithing

Silversmithing (SS): Knowledge
SSK1 Different shaping and forming techniques that may be utilised.
SSK2 Different tools and equipment that may be used for the task.
SSK3 Process and purpose of annealing metal when shaping and forming materials.
SSK6 How the different properties of metals impact on the method used to join them.
SSK8 Different finishes that can be applied to silverware.
SSK10 The use of plating and patination
SSK11 How different finishes can be achieved
SSK12 The principle of part polishing when assembling an item

Silversmithing (SS): Skills
SSS2 Demonstrate annealing process to shape and form metals.
SSS6 Demonstrate an understanding of different types of solder and related fluxes.
SSS7 Demonstrate an understanding around the use of jigs, binding wire, “stiches” and other fixtures used when soldering.

Casting

Casting (CA): Knowledge
CAK1 The various mould making materials used by the industry and their application

CAK2 The limitations of different mould making materials
CAK9 The basic principles of metal flow, solidification and spruing.
CAK11 The stages of the investment process.
CAK12 The importance of the burnout cycle in the investment process
CAK14 The various casting processes and their appropriate application to different metals
CAK15 The use and purpose of cloaking gases, over-pressure and vacuum when applied to casting processes.
CAK16 The temperature and casting cycles that should be applied.
CAK17 The processes needed to ensure that casts are fully formed
CAK19 The purpose process for quenching.
CAK20 The post-processing of flasks including the removal of investment by jet washing.

Casting (CA): Skills
CAS1 Demonstrate a range of relevant mould making skills to the required standard.
CAS12 Prepare metal and machinery for casting and cast metal into flasks.
CAS13 Quench flasks and remove the investment using appropriate equipment.

Stone Setting

Stone Setting (SET): Knowledge
SETK1 The different types of stone setting used in the industry.
SETK4 How to create bearers and grains using the appropriate tools including scorpers and gravers
SETK8 The use of burnishers to deburr items post-setting

Stone Setting (SET): Skills
SETS2 Prepare the item for setting by marking out and/or opening out the item to be set to accommodate the precious gems.
SETS3 Demonstrate a range of techniques to create bearers or grains prior to setting the piece

Mounting

Mounting (M): Knowledge
MK4 How designs can be measured and marked out on materials and the different tools that can be used
MK5 The terminology used within working drawings in stone mounting activities
MK7 The different melting points of non-ferrous metals and precious metals.
MK8 The ductility and malleability of the metals used.

Mounting (M): Skills
MS4 Transfer the design and drawing requirements to metal.
MS5 Mark out positions on material for cutting, shaping and drilling to the required specification.

Engraving

Engraving (EN): Knowledge
ENK2 Know about the key differences between repair, restoration, conservation and reconstruction
ENK3 How associated crafts (e.g. silversmithing, enamelling, metal spinning, polishing, stone mounting etc), impact on the completion of the engraved work
ENK5 How different engraving techniques and finishes can be communicated to customers
ENK6 How work can be accurately priced.
ENK7 Where information regarding new and emerging engraving techniques can be sought.
ENK8 The process of repairing engraved items damaged during the engraving process.

Engraving (EN): Skills
ENS3 Produce engraved surfaces using a range of materials, designs, surface types, standard and advanced techniques (including cutting, seal engraving, carving, piercing, inlay and overlay).
ENS6 Effectively communicate the various techniques surrounding engraving.
ENS7 Implement repair techniques including the use of burnishers, etc.

Enamelling

Enamelling (ENA): Knowledge
ENAK3 How the grade of the enamel can be assessed.
ENAK4 How wet lay enamel should be applied
ENAK5 How dust enamel should be applied
ENAK6 How enamel can be reworked prior to firing
ENAK7 The different firing methods suitable for enamelling purposes including gas torch, batch, firing in electric kiln, firing in an electric conveyor furnace.
ENAK9 Spotting and identifying errors in enameling
ENAK10 How defects can be corrected

Enamelling (ENA): Skills
ENAS4 Dry the enamel ready for application if using dry sifting technique.
ENAS7 Dust the enamel onto the product to the correct level ready for firing.
ENAS9 Set kiln to the correct temperature for vitrifying the enamel.
ENAS10 Produce the surface required including matt, shiny or satin finishes.
ENAS12 Correct pin holes, surface dirt and cracks.

Polishing/Finishing

Polishing/Finishing (POL): Knowledge
POLK2 The correct sequences for removing fire stain, preliminary abrasive polishing, pickling, barrelling, finishing, chemical stripping, bright polishing and finishing.
POLK3 The differing polishing materials that may be used.
POLK5 The properties associated with differing polishing materials.
POLK6 How to specify the use of specific compounds including abrasive, polishing, finishing and matting.
POLK7 How to specify the use of polishing tools and equipment including mops, felt bobs, brushes and composition wheels.
POLK8 How to specify the use of polishing equipment including hand and machine polishing.
POLK10 The function of materials used in barrel polishing.
POLK13 How plating equipment should be used
POLK 14 How to measure the micron thickness of the product used when plating.

Polishing/Finishing (POL): Skills
POLS3 Finish work using a range of equipment, compounds and chemicals.
POLS6 Prepare and dress mops and bobs.
POLS8 Prepare and use ultra-sonic cleaner and solution.
POLS9 Prepare and use plating equipment.

CAD/CAM Processes

CAD/CAM Processes (CAD): Knowledge
CADK2 How to communicate with the designer to ensure that the CAD design is optimal
CADK3 How to interpret what the designer is seeking to achieve
CADK4 The functional and practical aspects and nature of materials needed to produce differing designs including weights and thicknesses
CADK9 The use of component libraries and other software tools that support effective design and production.
CADK10 How to create forms and shapes relevant to the trade specialisation.
CADK11 The different forms of output e.g. machining files, SLA, STL., etc
CADK13 The range of materials that are available and suitable for CAM processing.
CADK15 The limitations, strengths and weaknesses of the available CAM solutions.
CADK17 Why models may require curing and the different methods by which this can be achieved.
CADK19 The impact that shrinkage, warping and fitting can have on items produced
CADK20 How the design can be adjusted to take account of shrinkage and warping.

CAD/CAM Processes (CAD): Skills
CADS4 Assess the functionality and practicality of the design
CADS6 Demonstrate the use of rendering packages for presentation purposes
CADS10 Check on the successful curing of 3D printed resin models.
CADS13 Utilise software to address issues of shrinkage, etc.
CADS14 Use measuring equipment to assess whether the item has been built to acceptable tolerances and to scale

Lapidary

Lapidary (LAP): Knowledge
LAPK1 Different types of stones used within the jewellery and creative industries, including precious and semi-precious
LAPK2 Fundamentals of gemmology and how stones are created
LAPK4 Terminology used to describe the most common cuts and shapes of stone
LAPK8 Methods used to measure and assess the effectiveness and quality of the cut

Lapidary (LAP): Skills
LAPS3 Demonstrate a range of techniques to mark areas and facets to be cut
LAPS6 Measure and assess the effectiveness of the cut of precious gems using the correct techniques.