Fine Jewellery Making

Competition Overview

This competition assesses the skills and abilities of competitors entering the field of Fine Jewellery Making.

Jewellery designers design and often make jewellery using a variety of materials, including gold, silver and precious stones. They design and plan pieces that can have great sentimental significance or symbolic meaning and can be wearable or are decorative artefacts. For more information on careers associated with fine jewellery making, visit the **jeweller webpage** on the WorldSkills UK website.

This competition will focus on the manufacture of intricate jewellery pieces from a detailed specification. Competitors will use their understanding of metalworking and silversmithing, working to detailed drawings, to fabricate jewellery pieces in timed conditions.

The competition will take competitors through the following stages:

Stage 1 Registration and preparation

To compete in the competition, you must register using the WorldSkills UK website. You will then receive a confirmation of whether you have successfully registered. Whilst you wait to get to the next stage of the competition, you should do your best to prepare for the competition by taking a look at the **pre-competition activity task** which you can find within this handbook on page 6.

Stage 2 Passive stage

Shortly after registering, the competition journey will begin with what is called a passive stage. This will be an online task that the competitor will complete and then return to WorldSkills UK for marking. This is a really important part of the competition journey as it gives the competitor an early taste of what knowledge is needed to be successful on the journey. Once everyone's scores have been totalled, competitors will be informed if they have passed on to the next round, called the national qualifiers.

Stage 3 National Qualifiers

For competitors who have managed to pass though the passive stage the next step is the national qualifiers. This is where the competitor will be allocated a physical local centre from where to compete and will give competitors the chance to demonstrate their skillset. This stage will be marked by WorldSkills UK expert judges. The top eight scores from the national qualifiers will then go through to the next round, the national finals.

Stage 4 WorldSkills UK National Finals

The top eight (8) competitors in the UK will be invited to compete in the UK National Final which is the pinnacle of the UK national competition cycle. The finals are usually a large-scale event, and a chance to show off your skills, meet a bunch of industry professionals and other competitors taking part, as well as bring your family along to see you compete.

Stage 5 WorldSkills UK International Competitions

Please note the 2021 competition will not be a selection year for the international competitions.

Beyond the national finals, there are a host of opportunities for competitors. Age-eligible competitors who show the highest skills, passion, and drive from the national finals will be given the opportunity to compete to train for the EuroSkills and WorldSkills international competitions.

Those who are not eligible for international competitions may join the Champions programme, which allows continued involvement, including the opportunity to work with WorldSkills UK and visit schools, colleges, and events to inspire the next generations.

Alternatively, if training is of interest to you, you could consider supporting WorldSkills UK with organising and training, and even helping to run the National Finals.

Resources

For more information and resources, including how to register, competition rules and the steps for competing **visit our webpage.**

In addition to this, **visit the Goldsmiths' Centre website** and join the free student and apprenticeship membership to access resources and content about the jewellery industry.

Core Competencies

Competitors taking part in this competition should have undertaken specific training in diamond mounting and are confident with basic jewellery bench equipment, processes such as soldering and piercing as well as working from technical drawings. A more detailed breakdown is provided below:

Work Organisation and Planning

A competitor needs to know and understand:

- procedures for checking and maintaining specialist individual tools and shared workshop tools and machines
- safe operation and maintenance of shared workshop machines and individual tools
- procedures for the secure storage of jewellery and materials

- risks attached to the use of natural and propane gas, oxygen, electricity, acid, and chemical products
- legislation and best practice relating to health and safety
- specialist terminology relating to precious metals and jewellery making.

A competitor shall be able to:

- interact professionally with jewellery designers, and other jewellery professionals
- provide expert advice and guidance on jewellery manufacturing techniques for a specific design proposal
- assess and plan for the separate tasks and operations necessary for the manufacture or repair of jewellery components and assembly of completed jewellery pieces
- accurately interpret proposals for manufacture of jewellery components or complete jewellery pieces including, technical drawings, sample pieces and sketches or rendered images from 3D digital models
- interpret technical terminology and symbols
- determine time, materials and equipment necessary to complete projects
- work with a high degree of accuracy and precision on fine and delicate pieces
- apply correct procedures for reduction of wastage and retention of precious metal filings for re-use
- use personal protective equipment (PPE) and clothing sturdy enough to protect the user from small pieces of flying or incandescent metal
- operate machinery and tools in a manner that avoids risk to him/herself or others within the workshop.

Manufacture of Precious Metal Alloys

A competitor needs to know and understand:

- the individual needs to know and understand:
- content of precious metal alloys and the impact that additives have on the precious metal in terms of colour, pliability and durability
- how alloys react to various processes used by the jewellery maker
- properties of precious metal alloys and their solders.

Preparation of Precious Metal Alloys for the Manufacture of Jewellery Components

A competitor needs to know and understand:

- properties and applications of various recognized precious metal alloys
- procedures for transformation of precious metal alloy ingots in preparation for the manufacture of jewellery components
- applications and uses for various recognized precious metals.

A competitor shall be able to:

- manufacture precious metal sheet or square wire, and reduce to any pre-determined thickness using manual or electrically powered polling mills
- manufacture and reduce thickness of square or round wire in precious metal alloys to any pre-determined dimensions using drawing banks
- manufacture round wire from square wire, and reduce to any pre- determined diameter using a drawing bank.

Manufacture of a simple Jewellery Component

A competitor needs to know and understand:

- various jewellery components and their uses
- techniques and methods for forming and constructing components.

A competitor shall be able to:

- manufacture Chenier/tube and reduce to any predetermined diameter using a drawing bank
- transform precious metal alloy sheet, wire or Chenier/tube into basic jewellery components by means of bending, shaping and forming so as to conform to any shape pre-determined by technical drawing or sample component
- accurately drill precious metals so as to conform to any shape pre- determined by technical drawing or sample component
- transform basic jewellery components by means of abrasive techniques such as milling, grinding, filing ajour-sawing etc. so as to conform to any shape pre-determined by a technical drawing or sample component
- hammer, emboss, shape or dome precious metal sheet of an appropriate thickness into low relief, so as to conform to any shape pre-determined by a technical drawing or sample component using an appropriate doming tool.

Manufacture of Complex Components & Complete Jewellery Pieces using Solder Joints

A competitor needs to know and understand:

- various jewellery components and their uses
- range and use of techniques and methods for forming, constructing and finishing components
- gemstone setting
- correct and safe use of solders and soldering torches.

A competitor shall be able to:

- assemble basic jewellery components into complex jewellery components by means of precious metal solder joins so as to conform to any design pre-determined by a technical drawing or sample component
- manufacture settings for precious gemstones so as to conform to any design pre-determined by a technical drawing or sample component, and in such a manner that stones of the pre-determined size and shape can be properly set by a professional gem setter
- assemble basic jewellery components and complex jewellery components into completed jewellery pieces by means of precious metal solder joins so as to conform to any design pre-determined by a technical drawing or sample component.

Surface Finish

A competitor needs to know and understand:

- skill specific finishing and polishing methods and techniques
- effect of different types and grades of polishing media on the surface finish
- procedures, tools and techniques to gain the optimum surface finish
- common surface imperfections and defects and appropriate techniques for their repair
- international grades of sandpaper used in surface finishing.

A competitor shall be able to:

- avoid creating marks, scratches and surface imperfections throughout all stages of manufacture of simple and complex jewellery components and completed jewellery pieces prior to the application of final surface finish
- finish surfaces at stages throughout the manufacturing process
- apply non-reflective 800ASA sandpaper (or equivalent) appropriate for critical evaluation and/or passing on to any subsequent phase of production requiring other goldsmith's industry skills, such as casting, gem-setting, engraving and polishing.

Marking & Assessment

The marking scheme is designed to fairly compare every competitors work, below is an example of how marks are awarded across a range of skill areas:

	SKILL AREAS TO BE ASSESSED	Maximum Marks awarded
A	Similarity to drawing/function	20
B	Sawing – ajour work	20
C	Soldering	20
D	Surface Finish	10
E	Dimensions (Tolerance -/+ 0.2mm)	20
F	Completion of Exercise on Time	10
TOTAL		100

Each competition module will be assessed and marked independently of any other competition activity.

For all judgement criteria, the following marking scale will be used:

- 0 – Does not meet standard
- 1 – Meets minimum standard
- 2 – Meets standard
- 3 – Exceeds Standard

Once marks have been awarded by each of the judges, they will be averaged to obtain the final mark.

A panel of judges has been selected from a range of industry, college and training provider representatives. The judges' decisions will be moderated and quality assured by WorldSkills UK before being confirmed.

Competitors who achieve the highest marks across all heats will be invited to compete at the UK Final. There is no automatic entrance to the UK Final for heat winners. The Goldsmiths' Centre will inform finalists following moderation of marks.

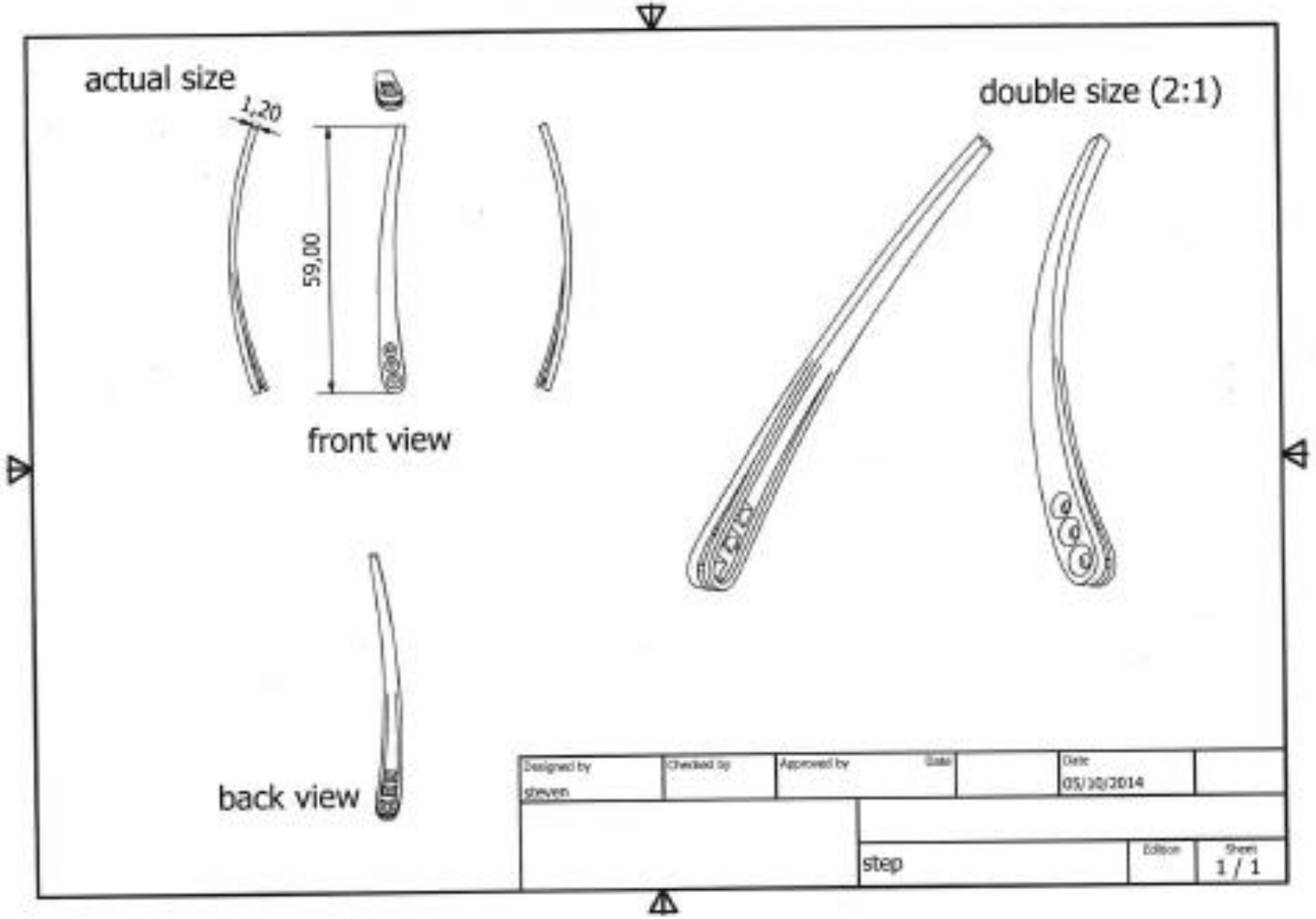
WorldSkills UK Skills Competitions

Fine Jewellery Making Pre-Competition Activity

Please note: the pre-competition activity is designed to provide those interested in the competitions an insight into the type of tasks expected of them during the competition. It is not a task that competitors will be required to undertake within the competition.

Task

- competitors are required to create the piece depicted in the attached diagrams, to the exact measurements specified
- competitors should use general jewellery making hand tools in the creation of this piece, including piercing saw, hand files, needle files and a range of pliers
- all projects connected with World Skills UK are made in Sterling Silver and will NOT be polished
- competitors should allow 4 hours for the completion of this task
- tutors/employers of competitors should adapt the enclosed marking scheme to suit the needs of their competitors; we advise using the tolerances within the scheme already.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Marking Scheme

Competitor No		**Competitor Name**		**Date**	
Competition	**Fine Jewellery Making**	**Venue**			

Aspect ID	Aspect of Criterion – Description	Max Mark	Judges' Score	Mark Awarded
1	Similarity to drawing – how closely the piece reflects the given design in overall shape and feel	10		
2	Sawing – ajour work – the quality of all piercing out and opening of stone holes including front and back holes	10		
3	Soldering – the quality and consistency of all soldering, marks will be lost where too much or too little solder has been used and lack of consistency in appearance	10		
4	Surface finish – quality of surface finish using up to a minimum of 800 grade emery paper	5		
5	Dimensions – marks will be awarded for accuracy and the ability to make to the given dimensions within a given tolerance (+ or – 0.2 mm)	10		
6	Completion on time – Marks will be awarded for completing the project within the given time	5		

	TOTAL	**50**		