**FINE JEWELLERY MAKING**

Core Competencies

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| **Core competencies and standards for WorldSkills UK Skills Competitions activities** | | **Qualifier** | **UK Final** | **Team UK** |
| **Competency** | Work Organisation & Management | X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X | X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X | X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X |
| **Standards** | The individual 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  The individual 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  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  • Comply with the health and safety regulations and procedures of the country or region where working  • 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  • Proactively maintain continuous professional development in order to aware of fashion trends in jewellery design, specialist manufacturing techniques and developments in technology |
| **Competency** | Manufacture of Precious Metal Alloys | X  X  X | X  X  X | X  X  X |
| **Standards** | 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  • Laws and regulations relating to precious metal content for sale and export  • Assaying processes and procedures for the country of operation, purchase and sale of jewellery products  • Assaying marks delineating precious metal quality  • Formats in which precious metals are sold  The individual shall be able to:  • Recognize authenticity and quality signs for precious metals  • Source precious metals of the correct price and quality for jewellery manufacture  • Calculate the proportions and quantities of fine precious metals and base metals required for any predetermined quantity of any recognized precious metal alloy  • Cast precious metal alloy ingots and bars of any predetermined weight, with a minimum of residual impurities, ready to be milled or rolled in preparation for the manufacture of jewellery components |
| **Competency** | Preparation of Precious Metal Alloys for the Manufacture of Jewellery Components | X  X  X | X  X  X  X | X  X  X  X  X |
| **Standards** | The individual 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  The individual 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 |
| **Competency** | Manufacture of a Simple Jewellery Component | X  X  X  X  X  X  X | X  X  X  X  X  X  X | X  X  X  X  X  X  X |
| **Standards** | The individual needs to know and understand:  • Various jewellery components and their uses  • Techniques and methods for forming and constructing components  The individual 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 |
| **Competency** | Manufacture of Complex Components & Complete Jewellery Pieces using Solder Joints | X  X  X  X  X | X  X  X  X  X | X  X  X  X  X  X |
| **Standards** | The individual 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  The individual 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  • Manufacture functioning mechanisms for jewellery such as hinges, clasps, articulations, pressure snaps riveting and screw threads so as to conform to any design pre-determined by a technical drawing or sample component, and in such a manner that they will function as required and continue to function in the same manner for an indefinite period of time with normal use  • 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  • Repair damaged or worn pieces of jewellery in such a manner that the restored piece will be indistinguishable from its original aspect at the time of manufacture |
| **Competency** | Surface Finish | X  X  X  X | X  X  X  X | X  X  X  X |
| **Standards** | The individual 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  The individual 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 |

Note: Core Competencies are tested, identified and measured as recognition of the competition level and duration.