



Federal Democratic Republic of Ethiopia
OCCUPATIONAL STANDARD
LAPIDARY
NTQF Level I, II, III and IV



*Ministry of Education
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Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopian Occupational Standards (EOS) are - a core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopian Occupational Standard comprised of Units of Competence.

A Unit of Competence describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title, NTQF level
- Unit code
- Unit title
- Unit descriptor
- Elements and Performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit of Competence guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the respective occupation with all the key components of a Unit of Competence:

- the chart with an overview of all Units of Competence for the respective occupation (Unit of Competence Chart) including the Unit Codes and the Unit of Competence titles
- the contents of each Unit of Competence – this includes further directions on the contents and format of the unit of competence
- occupational map providing the Technical and Vocational Education and Training (TVET) providers with information and important requirements to consider when designing training programs for this standards, and for the individual, a career path

UNIT OF COMPETENCE CHART

Occupational Standard: Lapidary		
Occupational Code: MIN LAP		
<i>NTQF Level I</i>		
MIN LAP1 01 0114 Acquire Gemstones	MIN LAP1 02 0114 Operate and Maintain Manufacturing Machineries and Equipment	MIN LAP1 03 0114 Handle Gem Materials
MIN LAP1 04 0114 Operate a Personal Computer	MIN LAP1 05 0114 Tumble Gem Material	MIN LAP1 06 0114 Slab Stones
MIN LAP1 07 0114 Apply Quality Standards	MIN LAP1 08 0114 Work with Others	MIN LAP1 09 0114 Receive and Respond to Workplace Communication
MIN LAP1 10 0114 Demonstrate Work Values	MIN LAP1 11 0114 Develop Understanding of Entrepreneurship	MIN LAP1 12 0114 Apply 3S

NTQF Level II

<u>MIN LAP2 01 0114</u> Operate Basic Machines and Equipments	<u>MIN LAP2 02 0114</u> Obtain Gem Materials	<u>MIN LAP2 03 0114</u> Slab /Trim and Polish Gemstone Materials
<u>MIN LAP2 04 0114</u> Identify and Assess Gem Materials	<u>MIN LAP2 05 0114</u> Handle and Store Rough and Cut Gemstones	<u>MIN LAP2 06 0114</u> Cabbing (Make Cabochoon)
<u>MIN LAP2 07 0114</u> Bead Making	<u>MIN LAP2 08 0114</u> Undertake Routine Operational Maintenance of Machinery	<u>MIN LAP2 09 0114</u> Participate in Workplace Communication
<u>MIN LAP2 10 0114</u> Work in Team Environment	<u>MIN LAP2 11 0114</u> Develop Business Practice	<u>MIN LAP2 12 0114</u> Standardize and Sustain 3S

NTQF Level III

<u>MIN LAP3 01 0114</u> Facet Semi- precious Gemstones	<u>MIN LAP3 02 0114</u> Complete Pre-cutting Processes for Solid Opals	<u>MIN LAP3 03 0114</u> Cut and Polish Solid Opals
<u>MIN LAP3 04 0114</u> Complete Pre-cutting Processes for Opal Doublets and Triplets	<u>MIN LAP3 05 0114</u> Cut and Polish Opal Doublets and Triplets	<u>MIN LAP3 06 0114</u> Carve Gem Materials
<u>MIN LAP3 07 0114</u> Monitor Implementation of Work Plan/Activities	<u>MIN LAP3 08 0114</u> Apply Quality Control	<u>MIN LAP3 09 0114</u> Lead Workplace Communication
<u>MIN LAP3 10 0114</u> Lead Small Teams	<u>MIN LAP3 11 0114</u> Improve Business Practice	<u>MIN LAP3 12 0114</u> Prevent and Eliminate MUDA

NTQF Level IV

MIN LAP4 01 0114

Identify the Requirements for Establishing Gem-Cutting Workshop

MIN LAP4 02 0114

Apply Advanced Pre-cutting Processes to Complex Precious Gems

MIN LAP4 03 0114

Opal Spheres and Beads

MIN LAP4 04 0114

Facet Precious Gemstones

MIN LAP4 05 0114

Production Cut and Polish Opal

MIN LAP4 06 0114

Perform Gemstone Setting

MIN LAP4 07 0114

Opal Carving

MIN LAP4 08 0114

Market Gemstones

MIN LAP4 09 0114

Plan and Organize Work

MIN LAP4 10 0114

Migrate to New Technology

MIN LAP4 11 0114

Establish Quality Standards

MIN LAP4 12 0114

Develop Individuals and Team

MIN LAP4 13 0114

Utilize Specialized Communication Skills

MIN LAP4 14 0114

Manage and Maintain Small/Medium Business Operations

MIN LAP4 15 0114

Apply Problem Solving Techniques and Tools

NTQF Level I

Occupational Standard: Lapidary Level I	
Unit Title	Acquire Gemstones
Unit Code	MIN LAP1 01 0114
Unit Descriptor	This unit comprises the process of identifying resources from area geology, recognition of minerals, and the physical collection or mining, labelling, cleaning, transporting, pricing and stocking of the required rock or stone.

Elements	Performance Criteria
1. Collect/mine Gemstones	<p>1.1 Sources are identified based on available data from locals, Mining Desks, Mining Bureaus, Ministry of Mines, and/or other informed individuals.</p> <p>1.2 Field equipment is identified and prepared based on area geology and source material known.</p> <p>1.3 Collected and/or mined material is labelled, bagged, and transported.</p> <p>1.4 Occupational Health and Safety requirements are identified and applied on field.</p>
2. Grade Gemstones	<p>2.1 Tools and equipments are prepared as required per need of the particular job. .</p> <p>2.2 Material is sorted by type, size, clarity and color.</p> <p>2.3 Material is weighed and/or measured to determine stock.</p> <p>2.4 Material is catalogued by type, size, clarity, color and weight to determine stock.</p> <p>2.5 Material is priced based on cost of acquisition or current market value as fit to the need of the owner.</p>

Variable	Range
Occupational Health and Safety (OHS)	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Appropriate outdoors clothing to protect oneself from the weather, are needed as well as environmental or occupational hazards ought to be paid attention to. Sound environmental protection is highly advised.
Tools and equipment	<ul style="list-style-type: none"> • May include but not limited to: • Hand tools, visors or loupes, bags, first aid kits, pencils, notebooks, markers and tapes, appropriate clothing,

Evidence Guide	
Critical aspects of Competence	<p>Demonstrate knowledge and skills in:</p> <ul style="list-style-type: none"> • Processes of stone identification • Grading • Protecting the environment

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	<ul style="list-style-type: none"> • Safety procedures
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Stone identification, • use of hand tools, • environmental protection code • Knowledge of the outdoors and safety procedures
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Prepared tools and equipments as required per need of the particular job. • Prepare Field equipment based on area geology and source material known. • Collect/mine , clean, transport, grade and price gemstones • Use catalogued to grade by type, size, clarity, color and weight to determine stock
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be accessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level I	
Unit Title	Operate and Maintain Manufacturing Machineries and Equipment
Unit Code	MIN LAP1 02 0114
Unit Descriptor	This competency covers the operation of production equipment and the resolving of routine problems in a simulated or trial manufacturing environment where there is a high degree of direct supervision. This competency is intended to be applied to any item of routine production equipment.

Elements	Performance Criteria
1. Check job requirements.	<p>1.1 Workplace requirements are identified by following established procedures and practices.</p> <p>1.2 Product, materials and equipment requirements are identified for job(s).</p>
2. Control hazards.	<p>2.1 Hazards in the production work area are identified.</p> <p>2.2 The risks arising from those hazards are assessed.</p> <p>2.3 Measures are implemented to control or avoid those risks in line with procedures and duty of care to fellow workers.</p>
3. Prepare equipment for operation as required	<p>3.1 Pre-start up checks are performed.</p> <p>3.2 Suspected unusual or non standard product, materials and equipment are reported to an appropriate person.</p> <p>3.3 If required, other team members are notified on the intended equipment function and start up.</p> <p>3.4 Materials are checked/ supplied to equipment as required.</p> <p>3.5 The item of equipment is started up as required.</p> <p>3.6 Specified conditions and build operating rate steadily, checking expected performance are brought at various stages in accordance with procedures.</p>
4. Operate equipment	<p>4.1 Equipment operating conditions are monitored.</p> <p>4.2 Product characteristics are monitored.</p> <p>4.3 Conditions and characteristics which indicate a problem or a potential problem are recognized.</p> <p>4.4 Appropriate action is taken in response to problem or potential problem.</p> <p>4.5 Supply of materials and removal of products are maintained as required.</p> <p>4.6 Required records are completed.</p>

	4.7 Equipment and work area is kept in a clean, organized and safe condition.
5. Prepare equipment for shut down as required	<p>5.1 Emergency pause, stop or shutdown is performed as required.</p> <p>5.2 Equipment is ensured to be free of product or purged as required.</p> <p>5.3 Equipment is shut down in accordance with procedures.</p> <p>5.4 Make sure equipment and area is left in a safe condition and ready for need.</p>
6. Adjust and maintain machine	6.1 Routine maintenance and adjustments are carried out as required which may include slide and collar adjustment, cleaning and lubrication.

Variable	Range
Workplace	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Workplace for this unit covers a manufacturing environment specifically established for learning introductory manufacturing skills. It may be: • a school classroom or workshop equipped to teach manufacturing principles and practices • RTO premises equipped to teach manufacturing principles and practices • An enterprise environment where above average supervision exists and training is occurring. The normal production imperatives have been modified to take into account the training being delivered.
Procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Procedures includes all work instructions, standard operating procedures, formulas/ recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of equipment and processes. They may be written, verbal, computer based or in some other form. • For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Equipment for the purposes of this unit covers routine or common manufacturing equipment suitable for students operating in a simulated or trial manufacturing environment where there is a high degree of direct supervision. examples include but are not limited to: • Slab saws • Tumbling machines

	<ul style="list-style-type: none"> • Grinders and other equipments
Hazards	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • hazardous materials • gases and liquids under pressure • moving machinery • cutting edges • electrical equipment • materials handling • Environments subject to heat, noise, dusts or vapours.
Pre-start up checks	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • visual checks • completing checklists • checking that safety guards, gates etc are in position and are operational • other checks required by standard operating procedures and manufacturer's instructions
Equipment operating conditions	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Equipment operating conditions will be monitored using a range of techniques including: • monitoring of measured or indicated data as shown by gauges, charts etc., (e.g. speed, hours on line, pressure, temperature, flow, vibration) • The senses of smell, sight, sound and feel as appropriate.
Product characteristics	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Product characteristics includes: • product quality • production rate • defect rate
Problem/potential problem	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • changes to operating conditions • adverse changes to product characteristics • adverse changes to waste
Appropriate action	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • making adjustments in accordance with procedures • stopping the equipment in accordance with procedures • Reporting to appropriate person.
Records	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • log sheets/books • job/work sheets • electronic/paper records • verbal/voicemail/email reports
Need	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • leaving the equipment ready for restart • leaving it safe for maintenance • preparing for a medium/long term shut down

Evidence Guide			
Critical aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • It is essential that the equipment be understood and that the importance of critical material properties, settings and readings is known. Competence must be demonstrated in the ability to recognise and analyse potential or actual problem situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to avoid problems rather than on recovery from a problem. • Consistent performance should be demonstrated. In particular look to see that: <ul style="list-style-type: none"> • process conditions are maintained within limits • quality is monitored to minimise wastage • start-up and shutdown occurs first time • signals and alarms are responded to immediately • process measurements are continually made or observed • All OHS requirements are followed. • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution • Pre-start checks are made to ensure equipment is lined up to the plant in accordance with procedures and/or manufacturers specifications. • Besides assessing actual operation of manufacturing equipment many aspects may be also be assessed using a range of scenarios, case studies or what ifs as the assessment method. These assessment activities should include a range of problems, including new, unusual situations that may have been generated from past history 		
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • all major components of the equipment and describe the function of each • principles of equipment operation • equipment operating parameters • Equipment and product variables and their interactions. • apply and/or explain: <ul style="list-style-type: none"> • impact of materials and properties • start-up and shutdown processes • construction and limitations of the equipment • out of specification situations • distinguish between causes of faults such as: <ul style="list-style-type: none"> ➤ raw materials 		
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	<ul style="list-style-type: none"> ➤ instrument failure/malfunction ➤ electrical failure/malfunction ➤ mechanical failure/malfunction ➤ Variations in product parameters (temperature, flows, pressure & levels).
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • observation • following procedures for start up, operation and shut down of equipment • analysis • problem solving • communication • documenting
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Handle Gem Materials
Unit Code	MIN LAP1 03 0114
Unit Descriptor	This unit covers handling and examining gem materials to minimise the risk of damage to gem materials.

Elements	Performance Criteria
1. Prepare equipment for gemstone examination	1.1 Examination methods and equipment are selected appropriate to the gem material and examination requirements. 1.2 Equipment and specimen/s are prepared.
2. Perform gemstone examinations	2.1 The physical and optical properties of gem materials are investigated . 2.2 Examination results are recorded and verified.
3. Handle gem materials	3.1 Handling measures appropriate to gem material are identified. 3.2 Gem materials are handled to minimize risk of damage.
4. Investigate and report examination results	4.1 Examination results are prepared 4.2 These results are recorded.

Variable	Range
Equipment	May include but limited to: <ul style="list-style-type: none"> • Refract meter • UV light • Microscope • 10 X loupe • Tweezers
Investigation	May include but limited to: <ul style="list-style-type: none"> • Assess need for further examination • Cross reference other records • Cross reference valuation documents

Evidence Guide	
Critical aspects of Competence	Demonstrate skills and knowledge to: <ul style="list-style-type: none"> • Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • examination methods for gem materials in relation to the

	<p>properties and features that may affect specific materials during jewellery manufacture, repair or alteration</p> <ul style="list-style-type: none"> • equipment required for examination and the function of each • limitations of the selected equipment/methods • standard operating procedures and supplier/manufacturer specifications • the procedures for correct use of selected equipment • definitions of processes and features • physical and optical properties of relevant gemstones • the process for verifying results • resource materials • handling measures and precautions for specific gem materials during jewellery manufacture, repair or alteration • specific handling measures and precautions used during given jobs • evidence used in support of conclusions • terminology and definitions • limitations/errors in process/methods • sources of independent verification • hazards and control measures associated with handling gem materials, including housekeeping • the effects of inadequate housekeeping and workplace procedures • use and application of personal protective equipment • safe work practices and procedures
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • for evidence that confirms skills in: • reading, interpreting and following information on written job instructions, specifications, standard work procedures, charts, lists, illustrations and other applicable reference documents • checking and clarifying task-related information • entering task-related information onto proformas and workplace documents • selecting procedures and equipment for examination of gem materials • preparing, pre-setting, balancing, calibrating, and levelling equipment • cleaning specimens • using equipment according to manuals and standard operating procedures • identifying relevant physical and optical properties of gemstones • recording results and comparing results with known control items/charts/lists/graphs/diagrams and resource materials • reading valuation documents and making comparisons

	<ul style="list-style-type: none"> • verifying outcomes • selecting and applying handling measures and precautions in relation to given gem materials, work processes and tools/equipment • preparing format/documentation of results according to standard operating procedures • interpreting results • obtaining sufficient evidence to support conclusions • undertaking numerical operations and calculations/formulae within the scope of this unit
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Operate a Personal Computer
Unit Code	MIN LAP1 04 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to start up a personal computer or business computer terminal; to correctly navigate the desktop environment; and to use a range of basic functions. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Elements	Performance Criteria
1. Start computer, system information and features	<p>1.1 Workspace, furniture and equipment are adjusted to suit user ergonomic requirements.</p> <p>1.2 Work organization is ensured to meet organizational and Occupational Health and Safety (OHS) requirements for computer operation.</p> <p>1.3 Computer are started or logged on according to user procedures.</p> <p>1.4 Basic functions and features are identified using system information.</p> <p>1.5 Desktop configuration is customized, if necessary, with assistance from appropriate persons.</p> <p>1.6 Help functions are used as required.</p>
2. Navigate and manipulate desktop environment	<p>2.1 Features are opened, closed and accessed by selecting correct desktop icons.</p> <p>2.2 Desktop windows are opened, resized and closed by using correct window functions and roles.</p> <p>2.3 Shortcuts are created from the desktop, if necessary, with assistance from appropriate persons.</p>
3. Organise files using basic directory and folder structures	<p>3.1 Folders/subfolders are created with suitable names.</p> <p>3.2 Files are saved with suitable names in appropriate folders.</p> <p>3.3 Folders/subfolders and files are renamed and moved as required.</p> <p>3.4 Folder/subfolder and file attributes are identified.</p> <p>3.5 Folders/subfolders and files are moved using cut and paste, and drag and drop techniques.</p> <p>3.6 Folders/subfolders and files are saved to appropriate media where necessary.</p> <p>3.7 Folders/subfolders and files are searched for using</p>

	<p>appropriate software tools.</p> <p>3.8 Deleted folder/subfolders and files are restored as necessary.</p>
4. Print information	<p>4.1 Information is printed from installed printer.</p> <p>4.2 Progress of print jobs is viewed and deleted as required.</p> <p>4.3 Default printer is changed if installed and required.</p>
5. Shut down computer	<p>5.1 All open applications are closed.</p> <p>5.2 Computer is shut-down according to user procedures.</p>

Variable	Range
Ergonomic requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • avoiding radiation from computer screens • chair height, seat and back adjustment • document holder • footrest • keyboard and mouse position • lighting • noise minimisation • posture • screen position • workstation height and layout
Work organisation	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • exercise breaks • mix of repetitive and other activities • rest periods • visual display unit (VDU) eye testing
Occupational health and safety requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • OHS guidelines related to the use of the screen equipment, computing equipment and peripherals, ergonomic work stations, security procedures, customisation requirements • statutory requirements
Desktop icons	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • directories/folders • files • network devices • recycle bin and waste basket
File attributes	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • dates • size
Appropriate media	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • CDs • diskettes • local hard drive

	<ul style="list-style-type: none"> • other locations on a network • USB/ Flash/Thumb drives • zip disks
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Evidence Guide	
Critical aspects of Competence	Demonstrate skills and knowledge to: <ul style="list-style-type: none"> • navigation and manipulation of the desktop environment within the range of assigned workplace tasks • knowledge of organisational requirements for simple documents and filing conventions • Application of simple keyboard functions to produce documents with a degree of speed and accuracy relevant to the level of responsibility required.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as: <ul style="list-style-type: none"> ➢ OHS ➢ basic ergonomics of computer use ➢ main types and parts of computers, and basic features of different operating systems ➢ suitable file naming conventions.
Underpinning Skills	Demonstrate skills to: <ul style="list-style-type: none"> • literacy skills to identify work requirements, to comprehend basic workplace documents, to interpret basic user manuals and to proofread simple documents • communication skills to identify lines of communication, to request advice, to effectively question, to follow instructions and to receive feedback • problem-solving skills to solve routine problems in the workplace, while under direct supervision • technology skills to use equipment safely while under direction, basic keyboard and mouse skills and procedures relating to logging on and accessing a computer • basic typing techniques and strategies.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Tumble Gem Material
Unit Code	MIN LAP1 05 0114
Unit Descriptor	This Unit covers the tumbling process including sorting, rough and smooth grinding and polishing of rough material.

Elements	Performance Criteria
1. Prepare for Work	<p>1.1 Plan / End result is determined as required by job.</p> <p>1.2 OHS requirements and the discipline of the workplace are adhered to throughout the process.</p> <p>1.3 Task is planned and sequenced in conjunction with other tumbling processes</p> <p>1.4 Tools and equipments are selected and checked for serviceability</p> <p>1.5 Tumbling material is acquired as required by job</p> <p>1.6 Tumbling consumables are selected based on appropriateness.</p> <p>1.7 Equipment and work area is cleaned to avoid contamination.</p>
2. Prepare, select and weigh rough material.	<p>2.1 Rough is selected based on size and hardness.</p> <p>2.2 Rough is cleaned (washed) and all dirt, clay and unwanted matter removed.</p> <p>2.3 Rough is weighed to keep data of how much material is used up and to determine recovery rate.</p>
3. Start rough grind.	<p>3.1 Rough is loaded in barrel or bowl to 1/2 -3/4 full based on a recipe and tumbling procedures.</p> <p>3.2A 1 1/2 tablespoon of 60/80 ungraded or 80 graded grit is added.</p> <p>3.3 Fillers are added to allow coverage of space between the individual tumbling material.</p> <p>3.4 Water (if required) is filled to cover remaining space.</p> <p>3.5 Barrels / bowls are closed and lid is tightened.</p> <p>3.6 Machine is tagged with starting day and grit size.</p> <p>3.7 Machine is started and run for a week of rough grind.</p> <p>3.8 Tumbling mix is checked for appropriate grind. If unsatisfactory is rerun.</p> <p>3.9 Mix is unloaded if ground material is as desired.</p>

	<p>3.10 Stone is separated from filler and grit.</p> <p>3.11 Stone is cleaned /washed off grit and dirt.</p>
4. Start smooth grind.	<p>4.1 Barrel or bowl is loaded with the rough tumbled material.</p> <p>4.2 A 1½ tablespoon of 220 grit is added to the mix.</p> <p>4.3 Fillers are added to allow coverage of space between the individual tumbling material.</p> <p>4.4 Water is filled to cover remaining space.</p> <p>4.5 Barrels / bowls are closed and lid is tightened.</p> <p>4.6 Machine is tagged with starting day and grit size.</p> <p>4.7 Machine is started and run for a week of smooth grind.</p> <p>4.8 Tumbling mix is checked for appropriate grind. If unsatisfactory is rerun.</p> <p>4.9 Mix is unloaded if ground material is as desired.</p> <p>4.10 Stone is separated from filler and grit.</p> <p>4.11 Stone is cleaned /washed off grit and dirt.</p>
5. Start smooth grind.	<p>5.1 Barrel or bowl is loaded with the smooth tumbled material.</p> <p>5.2A 1½ tablespoon of 600 grit is added to the mix.</p> <p>5.3 Fillers are added to allow coverage of space between the individual tumbling material.</p> <p>5.4 Water is filled to cover remaining space.</p> <p>5.5 Barrels / bowls are closed and lid is tightened.</p> <p>5.6 Machine is tagged with starting day and grit size.</p> <p>5.7 Machine is started and run for a week of smooth grind.</p> <p>5.8 Tumbling mix is checked for appropriate grind. If unsatisfactory is rerun.</p> <p>5.9 Mix is unloaded if ground material is as desired.</p> <p>5.10 Stone is separated from filler and grit.</p> <p>5.11 Stone is cleaned/ washed off grit and dirt.</p>
6. Polish tumbled material.	<p>6.1 Barrel or bowl is loaded with the previously tumbled material.</p> <p>6.2A 1½ tablespoon of appropriate polish is added to the mix.</p> <p>6.3 Fillers are added (if required) to allow coverage of space between the individual tumbling material.</p> <p>6.4 Water is filled to cover remaining space.</p> <p>6.5 Barrels / bowls are closed and lid is tightened.</p>

	<p>6.6 Machine is tagged with starting day and polishing agent.</p> <p>6.7 Machine is started and run for a week.</p> <p>6.8 Tumbling mix is checked for appropriate polish. If unsatisfactory is rerun.</p> <p>6.9 Mix is unloaded if polished material is as desired.</p> <p>6.10 Stone is separated from other contents.</p> <p>6.11 Stone is cleaned/ washed off polishing agent.</p>
7. Start machine to clean polished material.	<p>7.1 Barrel or bowl is loaded with the polished material.</p> <p>7.2A 2 tablespoon of appropriate detergent is added to the mix.</p> <p>7.3 Fillers are added (if required) to allow coverage of space between the individual tumbling material.</p> <p>7.4 Water is filled to cover remaining space.</p> <p>7.5 Barrels / bowls are closed and lid is tightened.</p> <p>7.6 Machine is started and run for few minutes.</p> <p>7.7 Mix is unloaded.</p> <p>7.8 Stone is separated from other contents.</p> <p>7.9 Stone is sorted by size, pattern, etc.</p> <p>7.10 Sorting is done by type, size and color/pattern and materials are stored.</p> <p>7.11 Documentation is completed in accordance with workplace requirements.</p>
8. Clean up	<p>8.1 Work area is cleared, mopped, equipment and tools cleaned, checked and stored</p> <p>8.2 Waste is disposed off or recycled in accordance with environmentally safe practices and workplace and trade procedures</p>

Variable	Range
Occupational Health and Safety (OHS)	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • covered shoes • appropriate use of tools and equipment • workplace environment and safety, • appropriate handling of materials, • use of firefighting equipment, use of first aid equipment • hazard control and hazardous materials and substances • personal protective equipment is to include that is prescribed under legislation, regulation and workplace policies and practices
Tools, Equipment	May include but not limited to:

and Consumables	<ul style="list-style-type: none"> • Tumbler • measuring cups • Weights • Scales • Spanners, • Screw Drivers • Sieves • Bags • Loupes • Light Source • Materials <ul style="list-style-type: none"> ➤ Labels ➤ Markers ➤ Lubricants ➤ Grits ➤ Fillers ➤ Polishing Compounds ➤ Soap ➤ Water ➤ Stones/ Rocks
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Evidence Guide	
Critical aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Prepare for Work • Prepare, select and weigh rough material. • Start rough grind • Start smooth grind • Start smooth grind • Polish tumbled material • Start machine to clean polished material • Clean up
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • The Standard System of Measurement • Workplace and equipment safety requirements including relevant statutory regulation • Knowledge of stones and their physical characteristics • Knowledge of consumables (lapidary supplies) • Market driven quality procedures and processes within the context of tumbling baroque pieces • Equipment maintenance • Safe work methods
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards • Identifying different stones and their hardness • Application of industry/organizational quality procedures and processes within the context of tumbling stones

	<ul style="list-style-type: none"> • Identifying appropriateness of different grit sizes and polishing compounds for the different applications • Implementation of safe work methods • Identifying different grits and compounds
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Slab Stones
Unit Code	MIN LAP1 06 0114
Unit Descriptor	This unit covers the acquisition, slabbing, cleaning and documenting processes of a gemstone or a rock.

Elements	Performance Criteria
1. Prepare for Work	<p>1.1 Plan / End result is determined.</p> <p>1.2 Safety requirements and the discipline of the workplace are adhered to throughout the process.</p> <p>1.3 Task is planned and sequenced in conjunction with other slabbing processes.</p> <p>1.4 Tools and equipment are selected and checked for serviceability.</p> <p>1.5 Material to be slabbed is acquired.</p> <p>1.6 Equipment and work area is cleaned.</p> <p>1.7 Coolant is checked and filled if required.</p> <p>1.8 Blades are checked and maintained or replaced if required.</p> <p>1.9 Saws are loaded.</p> <p>1.10 Vices are double checked for firmness.</p> <p>1.11 Pump or coolant delivery system is checked.</p>
2. Slab material.	<p>2.1 Saw is kept on till the cut is through.</p> <p>2.2 Saw is stopped manually if so designed or needed.</p> <p>2.3 Slab is removed from saw.</p> <p>2.4 Slab is immersed in an appropriate cleaner.</p>
3. Clean up	<p>3.1 Work area is cleared, mopped, equipment cleaned.</p> <p>3.2 Waste is disposed off or recycled in accordance with environmentally safe practices and workplace and trade procedures</p>
4. Sort Finished Pieces	<p>4.1 Materials' sorting is done by type, size and color/pattern.</p> <p>4.2 Documentation is completed in accordance with workplace requirements</p>

Variable	Range
Tools, Equipment	May include but not limited to:

and Consumables	<ul style="list-style-type: none"> • Tools and equipment are to include • Slab saws • measuring tapes or rules • Weights • Scales • Boxes • Bags • Light Source • Pails / Buckets • Materials • Blades <ul style="list-style-type: none"> ➤ Labels ➤ Markers ➤ Lubricants ➤ Soap ➤ Water ➤ Stones/ Rocks
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Evidence Guide	
Critical aspects of Competence	<p>Demonstrate knowledge and skills to:</p> <ul style="list-style-type: none"> • The SI system of measurement • The Standard System of Measurement • Ability to maintain and clean equipment • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards • Identifying different stones and their hardness • Application of industry/organizational quality procedures and processes within the context of tumbling stones • Implementation of safe work methods
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • The SI system of Measurement • The Standard System of Measurement • Workplace and equipment safety requirements including • Relevant statutory regulation • Knowledge of stones and their physical characteristics • Knowledge of consumables (lapidary supplies) • Market driven quality procedures and processes within the context of slabbing stone. • The Slab saw: <ul style="list-style-type: none"> ➤ Shafts and bearings ➤ The Saw Carriage ➤ Carriage Feeds ➤ The Coolant and Tank ➤ Splash Hoods ➤ The Vice ➤ The Switches

Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • maintain and clean equipment • Apply workplace and equipment safety requirements including relevant statutory regulations, and standards • Identify different stones and their hardness
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Apply Quality Standards
Unit Code	MIN LAP1 07 0114
Unit Descriptor	This unit covers the knowledge, attitudes and skills required in applying quality standards in the operational activities.

Elements	Performance Criteria
1. Assess own work	<p>1.1 Completed work is checked against organization standards relevant to the activity being undertaken.</p> <p>1.2 An understanding is demonstrated on how the work activities and completed work relate to the next process and to the final appearance of the service / product.</p> <p>1.3 Faulty service is identified and isolated in accordance with policies and procedures.</p> <p>1.4 Faults and any identified causes are recorded and reported in accordance with standard procedures.</p>
2. Assess quality of service rendered	<p>2.1 Services rendered are quality checked against standards and specifications.</p> <p>2.2 Service rendered are evaluated using the appropriate evaluation parameters and in accordance with standards.</p> <p>2.3 Causes of any identified faults are identified and corrective actions are taken in accordance with policies and procedures.</p>
3. Record information	<p>3.1 Basic information on the quality performance is recorded in accordance with organization procedures.</p> <p>3.2 Records of work quality are maintained according to the requirements of the organization / enterprise.</p>
4. Study causes of quality deviations	<p>4.1 Causes of deviations from final outputs or services are investigated and reported in accordance with standard procedures.</p> <p>4.2 Suitable preventive action is recommended based on organization quality standards and identified causes of deviation from specified quality standards of final service or output.</p>
5. Complete documentation	<p>5.1 Information on quality parameters and other indicators of service performance is recorded.</p> <p>5.2 All service processes and outcomes are recorded.</p>

Variable	Range
Quality check	May include but not limited to: <ul style="list-style-type: none"> • Visual inspection

	<ul style="list-style-type: none"> • Physical measurements • Check against specifications/preferences
Quality standards	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • materials • service • output • processes/procedures
Quality parameters	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • style/design/specifications • durability • service variations • materials • damage and imperfections

Evidence Guide	
Critical Aspects of Competency	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Checking completed work continuously against standard • Identifying and isolating faulty service / workmanship • Checking service rendered against organization standards • Identifying and applying corrective actions on the causes of identified faults • Recording basic information regarding quality performance • Investigating causes of deviations of services against standard • Recommending suitable preventive actions
Underpinning Knowledge	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Relevant quality standards, policies and procedures • Characteristics of services • Safety environment aspects of service processes • Relevant evaluation techniques and quality checking procedures • Workplace procedures • Reporting procedures
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • Interpret work instructions, specifications and standards appropriate to the required work or service • Carry out relevant performance evaluation • Maintain accurate work records in accordance with procedures • Meet work specifications • Communicate effectively within defined workplace procedures
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level I	
Unit Title	Work with Others
Unit Code	MIN LAP1 08 0114
Unit Descriptor	This unit covers the knowledge, skills, and attitudes required to develop workplace relationship and contribute in workplace activities.

Element	Performance Criteria
1. Develop effective workplace relationship	<p>1.1 Duties and responsibilities are done in a positive manner to promote cooperation and good relationship.</p> <p>1.2 Assistance is sought from workgroup when difficulties arise and addressed through discussions.</p> <p>1.3 Feedback on performance provided by others in the team is encouraged, acknowledged and acted upon.</p> <p>1.4 Differences in personal values and beliefs are respected and acknowledged in the development.</p>
2. Contribute to work group activities	<p>2.1 Support is provided to team members to ensure workgroup goals are met.</p> <p>2.2 Constructive contributions to workgroup goals and tasks are made according to organizational requirements.</p> <p>2.3 Information relevant to work is shared with team members to ensure designated goals are met.</p>

Variable	Range
Duties and responsibilities	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Job description and employment arrangements • Organization's policy relevant to work role • Organizational structures • Supervision and accountability requirements including OHS • Code of conduct
Work group	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Supervisor or manager • Peers/work colleagues • Other members of the organization
Feedback on performance	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Formal/Informal performance appraisal • Obtaining feedback from supervisors and colleagues and clients • Personal, reflective behavior strategies • Routine organizational methods for monitoring service delivery
Providing support to team members	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Explaining/clarifying • Helping colleagues

	<ul style="list-style-type: none"> • Providing encouragement • Providing feedback to another team member • Undertaking extra tasks if necessary
Organizational requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Goals, objectives, plans, system and processes • Legal and organization policy/guidelines • OHS policies, procedures and programs • Ethical standards • Defined resources parameters • Quality and continuous improvement processes and standards

Evidence Guide	
Critical aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Providing support to team members to ensure goals are met • Acting on feedback from clients and colleagues • Accessing learning opportunities to extend own personal work competencies to enhance team goals and outcomes
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • relevant legislation that affects operations, especially with regards to safety • reasons why cooperation and good relationships are important • the organization's policies, plans and procedures • how to elicit and interpret feedback • workgroup member's responsibilities and duties • importance of demonstrating respect and empathy in dealings with colleagues • how to identify and prioritize personal development opportunities and options
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • read and understand the organization's policies and work procedures • write simple instructions for particular routine tasks • interpret information gained from correspondence • request advice, receive feedback and work with a team • organize work priorities and arrangement • select and use technology appropriate to a task • relate to people from a range of social, cultural and ethnic backgrounds
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level I	
Unit Title	Receive and Respond to Workplace Communication
Unit Code	MIN LAP1 09 0114
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to receive, respond and act on verbal and written communication.

Element	Performance Criteria
1. Follow routine spoken messages	<p>1.1 Required information is gathered by listening attentively and correctly interpreting or understanding information/instructions.</p> <p>1.2 Instructions/information is properly recorded.</p> <p>1.3 Instructions are acted upon immediately in accordance with information received.</p> <p>1.4 Clarification is sought from workplace supervisor on all occasions when any instruction/information is not clear.</p>
2. Perform workplace duties following written notices	<p>2.1 Written notices and instructions are read and interpreted correctly in accordance with organizational guidelines.</p> <p>2.2 Routine written instruction is followed in sequence.</p> <p>2.3 Feedback is given to workplace supervisor based on the instructions/information received.</p>

Variable	Range
Written notices and instructions	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Handwritten and printed material • Internal memos • External communications • Electronic mail • Briefing notes • General correspondence • Marketing materials • Journal articles
Organizational guidelines	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Information documentation procedures • Company policies and procedures • Organization manuals • Service manual

Evidence Guide	
Critical Aspects of	Demonstrates skills and knowledge in:

Competence	<ul style="list-style-type: none"> • Demonstrated knowledge of organizational procedures for handling verbal and written communications • Received and acted on verbal messages and instructions • Demonstrated competence in recording instructions/information
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • organizational policies/guidelines in regard to processing internal/external information • ethical work practices in handling communications • communication process
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • receive and clarify conciseness messages/information/communication • record messages/information accurately
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level I	
Unit Title	Demonstrate Work Values
Unit Code	MIN LAP1 10 0114
Unit Descriptor	This unit covers the knowledge, skills and attitude required in demonstrating proper work values.

Elements	Performance Criteria
1. Define the purpose of work	<p>1.1 One's unique sense of purpose for working and the 'whys' of work are identified, reflected on and clearly defined for one's development as a person and as a member of society.</p> <p>1.2 Personal mission is achieved in harmony with company's values.</p>
2. Apply work values/ethics	<p>2.1 Work values/ethics/concepts are classified and reaffirmed in accordance with the transparent company ethical standards, policies and guidelines.</p> <p>2.2 Work practices are undertaken in compliance with industry work ethical standards, organizational policy and guidelines.</p> <p>2.3 Personal behavior and relationships with co-workers and/or clients are conducted in accordance with ethical standards, policy and guidelines.</p> <p>2.4 Company resources are used in accordance with transparent company ethical standard, policies and guidelines.</p>
3. Deal with ethical problems	<p>3.1 Company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct are accessed and applied in accordance with transparent company ethical standard, policies and guidelines.</p> <p>3.2 Work incidents/situations are reported and/or resolved in accordance with company protocol/guidelines.</p> <p>3.3 Resolution and/or referral of ethical problems identified are used as learning opportunities.</p>
4. Maintain integrity of conduct in the workplace	<p>4.1 Personal work practices and values are demonstrated consistently with acceptable ethical conduct and company's core values.</p> <p>4.2 Instructions to co-workers are provided based on ethical, lawful and reasonable directives.</p> <p>4.3 Company values/practices are shared with co-workers using appropriate behavior and language.</p>

Variable	Range
Work values/ethics/ concepts	May include but are not limited to: <ul style="list-style-type: none"> • Commitment/ Dedication • Sense of urgency • Sense of purpose • Love for work • High motivation • Orderliness • Reliability and Dependability • Competence • Goal-oriented • Sense of responsibility • Being knowledgeable • Loyalty to work/company • Sensitivity to others • Compassion/Caring attitude • Balancing between family and work • Sense of nationalism
Work practices	May include but are not limited to: <ul style="list-style-type: none"> • Quality of work • Punctuality • Efficiency • Effectiveness • Productivity • Resourcefulness • Innovativeness/Creativity • Cost consciousness • 5S • Attention to details
Company resources	May include but are not limited to: <ul style="list-style-type: none"> • Consumable materials • Equipment/Machineries • Human • Time • Financial resources
Work incidents/ Situations	May include but are not limited to: <ul style="list-style-type: none"> • Violent/intense dispute or argument • Gambling • Use of prohibited substances • Pilferages • Damage to person or property • Vandalism • Falsification • Bribery • Sexual Harassment

	<ul style="list-style-type: none"> • Blackmail
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Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Defined one's unique sense of purpose for working • Clarified and affirmed work values/ethics/concepts consistently in the workplace • Demonstrated work practices satisfactorily and consistently in compliance with industry work ethical standards, organizational policy and guidelines • Demonstrated personal behavior and relationships with co-workers and/or clients consistent with ethical standards, policy and guidelines • Used company resources in accordance with company ethical standard, policies and guidelines. • Followed company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct/behavior
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Occupational health and safety • Work values and ethics • Company performance and ethical standards • Company policies and guidelines • Fundamental rights at work including gender sensitivity • Work responsibilities/job functions • Corporate social responsibilities • Company code of conduct/values • Balancing work and family responsibilities
Underpinning Skills	<p>Demonstrates skills in:</p> <ul style="list-style-type: none"> • Interpersonal skills • Communication skills • Self awareness, understanding and acceptance • Application of good manners and right conduct
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level I	
Unit Title	Develop Understanding of Entrepreneurship
Unit Code	MIN LAP1 11 0114
Unit Descriptor	This unit covers skills, knowledge and attitude required to understand the principles, functions, strategies and methods of entrepreneurship. It also covers identifying and developing the major entrepreneurial competences.

Elements	Performance Criteria
1. Describe and explain the principles, concept and scope of entrepreneurship	<p>1.1 The principles, concept and terminology of entrepreneurship are analyzed and discussed.</p> <p>1.2 The different / various forms of enterprises in the community are identified and their roles understood.</p> <p>1.3 The identified enterprises are categorized and classified.</p> <p>1.4 The terms and elements involved in the concept of enterprising, both on a personal level and in the context of being enterprising in business are identified and interpreted.</p> <p>1.5 Functions of entrepreneurship in business and how the entrepreneurs improved business and economic environment are explained.</p>
2. Discuss how to become entrepreneur	<p>2.1 Self-employment as an alternative option for an individual economic independence and personal growth is discussed and analyzed.</p> <p>2.2 Advantages and disadvantages of self-employment are discussed and explained.</p> <p>2.3 Entrepreneurial characteristics and traits are identified and discussed.</p> <p>2.4 Self-potential is assessed to determine if qualified to become future entrepreneur.</p> <p>2.5 Major competences of successful entrepreneurship are identified and explained.</p>
3. Discuss how to organize an enterprise	<p>3.1 The importance and role of business entrepreneurship in the society are discussed and correlated to the operations of the economy.</p> <p>3.2 Facts about small and medium enterprises are discussed, clarified and understood.</p> <p>3.3 Key success factor in setting up small and medium business are identified and explained.</p>

	<p>3.4 Business opportunities are identified and assessed.</p> <p>3.5 Business ideas are generated using appropriate tools, techniques and steps.</p> <p>3.6 Procedures for identifying suitable market for business are discussed and understood.</p> <p>3.7 Major factors to consider in selecting a location for a business are identified and discussed.</p> <p>3.8 Basic types of business ownership are identified and explained.</p> <p>3.9 Amount of money needed to start an enterprise estimated and distinction between pre operations and initial operation payments clarified.</p> <p>3.10 Advantages and disadvantages of using various sources of capital to start an enterprise are identified.</p>		
<p>4. Discuss how to operate an enterprise</p>	<p>4.1 Disadvantages and advantages of three alternatives means of becoming an entrepreneur are identified and understood.</p> <p>4.2 Process of hiring and managing people is discussed and explained.</p> <p>4.3 The importance and techniques of managing time are discussed and understood.</p> <p>4.4 The techniques and procedures of managing sales are discussed and explained.</p> <p>4.5 Factors to consider in selecting suppliers and the steps to follow when doing business with them are identified and discussed.</p> <p>4.6 Awareness of how new technologies can affect small and medium business are developed</p> <p>4.7 Characteristics of appropriate technology for use in small and medium business are identified and explained</p> <p>4.8 Different types of cost that occur in a business and how to manage them are discussed and understood</p> <p>4.9 Factors and procedures in knowing the cost of the enterprise are discussed and understood</p> <p>4.10 Importance of financial record keeping and preparing simple financial statement are explained and understood</p> <p>4.11 The application of self-management skills and negotiation skills are discussed in operating a business</p> <p>4.12 Risk assessment and management of business enterprise are performed</p>		
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5. Develop one's own business plan	<p>5.1 Process of preparing/ writing a business plan is discussed and applied</p> <p>5.2 Standard structure and format are applied in preparing business plan</p> <p>5.3 Findings of the business plan are interpreted, assessed and analyzed</p> <p>5.4 Feasibility of the business idea is made clear and understandable</p> <p>5.5 Problems that may arise or encounter when starting a business are identified and understand</p> <p>5.6 Techniques and procedures in obtaining and sourcing information are discussed and understood</p>
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Variables	Range
Classification	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Private vs. public • Profit vs. non-profit • Formal vs. Non-formal • Individual vs. Community • Local vs. Foreign • Business vs. Social • Small vs. Large • Manufacturing vs. Service • Consumer vs. Industrial
Major factors	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Economics (local economy) • Population • Competition
Three alternatives	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Buying an existing business • Starting a new business • Operating a franchising business

Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • explaining principles and concept of entrepreneurship • discussing how to become entrepreneur • discussing how to organize an enterprise • discussing how to operate an enterprise • developing business plan
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Entrepreneurship principles, concepts and terminologies • Entrepreneurial competence • Entrepreneurial motivation • Risk assessment and evaluation • Principles and process of negotiations

	<ul style="list-style-type: none"> • Self-management and self-employment • Managing sales, people and time • Factors in setting up small and medium business • Small and Medium Enterprise • Business plan development • Discussion techniques and procedures
Underpinning Skills	<p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • Planning and Leading • Presentation skills • Using technology • Managing money • Preparing simple financial statement • Selecting suppliers
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level I	
Unit Title	Apply 3S
Unit Code	MIN LAP1 12 0114
Unit Descriptor	This unit of competence covers the knowledge, skills and attitudes required by a worker to apply 3S techniques to his/her workplace. The unit assumes the worker has a particular job in the allocated workplace known by the individual.

Elements	Performance Criteria
1. Organize junior Kaizen Promotion Team (KPT).	<p>1.1 Basics, principles and stages of KPT are identified using appropriate procedures.</p> <p>1.2 Structure of Junior KPT is established in accordance with the organizational procedures.</p> <p>1.3 Effective and appropriate contributions are made to complement team activities and objectives using individual skills and competencies.</p> <p>1.4 Effective and appropriate forms of communications are used and undertaken with KPT members who contribute to know KPT activities and objectives.</p> <p>1.5 Kaizen Board (Visual Management Board) is prepared and used in harmony with different workplace contexts.</p>
2. Prepare for work.	<p>2.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>2.2 Job specifications are read and interpreted following working manual.</p> <p>2.3 OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>2.4 Appropriate materials are selected.</p> <p>2.5 Safety equipment and tools are identified and checked for safe and effective operation.</p>
3. Sort items.	<p>3.1 Plan is prepared to implement sorting activities.</p> <p>3.2 Cleaning activities are performed.</p> <p>3.3 All items in the workplace are identified following the appropriate procedures.</p> <p>3.4 Necessary and unnecessary items are listed using the appropriate format.</p> <p>3.5 Red tag strategy is used for unnecessary items.</p> <p>3.6 Unnecessary items are evaluated and placed in an appropriate place other than the workplace.</p>

	<p>3.7 Necessary items are recorded and quantified using appropriate format.</p> <p>3.8 Performance results are reported using appropriate formats.</p> <p>3.9 Necessary items are regularly checked in the workplace.</p>
4. Set all items in order.	<p>4.1 Plan is prepared to implement set in order activities.</p> <p>4.2 General cleaning activities are performed.</p> <p>4.3 Location/layout, storage and indication methods for items are decided.</p> <p>4.4 Necessary tools and equipment are prepared and used for setting in order activities.</p> <p>4.5 Items are placed in their assigned locations.</p> <p>4.6 After use, the items are immediately returned to their assigned locations.</p> <p>4.7 Performance results are reported using appropriate formats.</p> <p>4.8 Each item is regularly checked in its assigned location and order.</p>
5. Perform shine activities.	<p>5.1 Plan is prepared to implement shine activities.</p> <p>5.2 Necessary tools and equipment are prepared and used for shinning activities.</p> <p>5.3 Shine activity is implemented using appropriate procedures.</p> <p>5.4 Performance results are reported using appropriate formats.</p> <p>5.5 Regular shinning activities are conducted.</p>

Variable	Range
Junior KPT	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • 3S • 3MU (Mura, Muri and MUDA) • 4P (Policy, Procedure, People and Plant) • 4M (Material, Method, Man and Machine) • PDCA (Plan, Do, Check and Act)
OHS requirements	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances.

	<ul style="list-style-type: none"> • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • dust masks / goggles • glove • working cloth • first aid • safety shoes
Items	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • tools • jigs/fixtures • materials/components • machine and equipment • manuals • documents • personal items (e.g. bags, lunch boxes and posters) • safety equipment and personal protective equipment • other items which happen to be in the work area
The appropriate procedures	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • steps for implementing 3S (sort, set in order and shine) activities. • written, verbal and computer based or in some other format.
Unnecessary items	<p>are not needed for current production or administrative operation and include but not limited to:</p> <ul style="list-style-type: none"> • defective or excess quantities of small parts and inventory • outdated or broken jigs and dies • worn-out bits • outdated or broken tools and inspection gear • old rags and other cleaning supplies • electrical equipment with broken cords • outdated posters, signs, notices and memos <p>some locations where unneeded items tend to accumulate may include but not limited to:</p> <ul style="list-style-type: none"> • in rooms or areas not designated for any particular purpose • in corners next to entrances or exists • along interior and exterior walls • next to partitions and behind pillars • under the eaves of warehouses • under desks and shelves and in desk and cabinet drawers

	<ul style="list-style-type: none"> • near the bottom of tall stacks of items • on unused management and production schedule boards • in tools boxes that are not clearly sorted
Appropriate format	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • all items. • necessary items. • unnecessary items.
Red tag	<p>may include but not limited to:</p> <p>A format prepared with a red color paper or card which is filled and attached temporarily on the unnecessary items until decision is made. The red tag catch people's attention because red is a color that stands out. So to fill and attach red tag on items, asks the following three questions:</p> <ul style="list-style-type: none"> • Is this item needed? • If it is needed, is it needed in this quantity? • If it is needed, does it need to be located here?
Necessary items	<p>Are required in the workplace for current production or administrative operation in the amount needed.</p>
Tools and equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • paint • hook • sticker • signboard • nails • shelves • chip wood • sponge • broom • pencil • shadow board/ tools board
Shine activity	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Inspection • Cleaning • Minor maintenance may include: <ul style="list-style-type: none"> ➢ Tightening bolts ➢ Lubrication ➢ Replacing missing parts

Evidence Guide

Critical Aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Discuss how to organize KPT. • Describe the pillars of 5S. • Implement 3S in own workplace by following appropriate procedures.
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Kaizen principle, pillars and concept • Key characteristic of Kaizen

	<ul style="list-style-type: none"> • Elements of Kaizen • Wastes/MUDA • Basics of KPT • Aims, benefits and principles of KPT • Stages of KPT • Structure and role of the components of Junior KPT • Concept and parts of Kaizen board • Concept and benefits of 5S • The pillars of 5S • Three stages of 5S application • Benefits and procedure of sorting activities • The concept and application of Red Tag strategy • OHS procedures • Benefits and procedure of set in order activities • Set in order methods/techniques • Benefits and procedure of shine activities • Inspection methods • Planning and reporting methods • Method of Communication
Underpinning Skills	<p>Demonstrates skills of:</p> <ul style="list-style-type: none"> • Participating actively in KPT • technical drawing • communication skills • planning and reporting own tasks in implementation of 3S • following procedures to implement 3S in own workplace • using sorting formats to identify necessary and unnecessary items • improving workplace layout following work procedures • preparing labels, slogans, etc. • reading and interpreting documents • observing situations • gathering evidence by using different means • recording activities and results using prescribed formats • working with others • solving problems by applying 3S • preparing and using Kaizen board • preparing and using tools and equipment to implement 3S
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

NTQF Level II

Occupational Standard: Lapidary Level II	
Unit Title	Operate Basic Machines and Equipments
Unit Code	MIN LAP2 01 0114
Unit Descriptor	This unit covers application of knowledge, skills and attitudes of Preparing basic machinery and equipment for use, checking, cleaning and storing basic machinery and equipment for operating basic machinery and farm equipment.

Elements	Performance Criteria
1. Prepare basic machinery and equipment for use	<p>1.1 Machinery and equipment are identified and selected in accordance with work requirement.</p> <p>1.2 Routine pre-operational checks of machinery are done.</p> <p>1.3 Equipment is carried out to manufacturer's specifications and/ or enterprise procedures.</p> <p>1.4 Unsafe or faulty machinery and equipment are identified and segregated for repair or replacement in line with enterprise requirements.</p> <p>1.5 Occupational Health and Safety hazards in the workplace are identified and reported to the supervisor.</p>
2. Operate basic machinery and equipment	<p>2.1 Suitable personal protective clothing and equipment are selected, used, maintained and stored in accordance with Occupational Health and Safety requirements.</p> <p>2.2 Machinery and equipment are operated to manufacturers' specifications and in accordance with supervisor's instructions.</p> <p>2.3 Work is completed to supervisor's satisfaction and in accordance with Occupational Health and Safety requirements.</p> <p>2.4 Environmental implications associated with operation and maintenance are identified and reported verbally to the supervisor.</p>
3. Check, clean and store basic machinery and equipment	<p>3.1 Machinery and equipment use is detailed and recorded in accordance with enterprise requirements.</p> <p>3.2 Machinery and equipment are cleaned, secured and stored to manufacturer's specifications and supervisor instructions.</p> <p>3.3 Malfunctions, faults, wear or damage to machinery and equipment are identified and reported in line with enterprise requirements.</p> <p>3.4 Workplace areas are cleaned and maintained in line with Occupational Health and Safety and enterprise requirements.</p>

Variable	Range
Machinery and Equipment	May include but not limited to: <ul style="list-style-type: none"> • Small engine machinery such as slab/trim saws/cutters, grinder, drilling and others hand tools.
Occupational Health & Safety (OHS)	May include but not limited to: <ul style="list-style-type: none"> • safe operation and maintenance of machinery and equipment including guarding of exposed moving parts • manual handling, including safe lifting and carrying techniques • handling and storage of hazardous substances, and the appropriate use, maintenance and storage of personal protective clothing and equipment • outdoor work including protection from solar radiation, hazardous noise and organic and other dusts • identifying and reporting hazards Protection of people in the workplace.

Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • identified and selected machinery and equipment in accordance with supervisor's instructions • identified and segregated unsafe or faulty machinery and equipment for repair or replacement in line with enterprise requirements • selected, used, maintained and stored suitable personal protective clothing and equipment in accordance with occupational Health and Safety requirements • operated machinery and equipment to manufacturers specifications and in accordance with supervisor's instructions • cleaned machinery and equipment, secured and stored to manufacturers specifications and supervisors instructions • identified and reported malfunctions, faults, wear or damage to machinery and equipment in line with enterprise requirements
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • Pre-operational and safety checks for basic machinery and equipment. • Hazards associated with the operation of basic machinery and equipment. • Operating principles and operating methods for basic machinery and equipment. • Procedures for cleaning, securing and storing basic machinery and equipment. • Risks associated with the operation of machinery and equipment in different weather and difficult terrain conditions.

	<ul style="list-style-type: none"> • Relevant State/Territory legislation, regulations and Codes of Practice with regard to workplace OHS requirements, and the use and control of hazardous substances. • Environmental impacts and minimization measures associated with the operation of basic machinery and equipment. • Personal protective clothing and equipment and when and how it should be used, maintained and stored. • Enterprise policies with regard to machinery and equipment use, recording and reporting routines
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Pre-operational and safety checks for basic machinery and equipment. • Hazards associated with the operation of basic machinery and equipment. • Operating principles and operating methods for basic machinery and equipment. • Procedures for cleaning, securing and storing basic machinery and equipment.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Obtain Gem Materials
Unit Code	<u>MIN LAP2 02 0114</u>
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to procure rough opal from a variety of sources.

Elements	Performance Criteria
1. Investigate markets for gem products	1.1 The market is reviewed for cut and polished opal. 1.2 The market segment is identified for which the gem is to be obtained.
2. Investigate sources of rough gem	2.1 Sources of rough opal and method of obtaining rough gem are identified. 2.2 Various sources of gemstone, and procedures and protocol to be followed are determined. 2.3 The benefits of buying parcels of classed opal (whole or part) or buying single rough gemstones are investigated.
3. Source gem	3.1 Accepted protocols and ethics are complied with when sourcing gem. 3.2 Negotiation is used to solve problems and interaction finalised.

Variable	Range
Market	May include but not limited to: <ul style="list-style-type: none"> • boutique jewellers • craft stores or markets • gemstone dealers • hobby jewellers • internet auction sites • internet marketing • retail and wholesale jewellers • rock and gem shows • Souvenir markets.
Sources of rough opal	May include but not limited to: <ul style="list-style-type: none"> • gem and rock clubs • internet • lapidary supply shops • mining operation • nodding • opal buyers • opal miners • opal-specific stores • retail rock shops

	<ul style="list-style-type: none"> • rock and gem shows • trading newspapers • trash and treasure meets • Wholesale opal dealers.
Buying parcels of classed opal	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • considering whether the whole parcel is of use and determining whether to on-sell a segment of the parcel • determining whether the price is appropriate • negotiating the price • paying extra for segment • splitting the parcel • understanding how the parcel price was established • Verifying the origin, who has seen the parcel, that the opal has been classed and how long it has been for sale.
Protocol and ethics	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • binding nature of handshake deals • Complying with no loading Pre-operational and safety checks for basic machinery and equipment. • Hazards associated with the operation of basic machinery and equipment. • Operating principles and operating methods for basic machinery and equipment. • Procedures for cleaning, securing and storing basic machinery and equipment requirements • ensuring agreement of all parties • keeping transactions between parties private • making appointments before visiting • not entering unattended claims or property • Respecting privacy and property.

Evidence Guide

Critical aspects of Competence	<p>Demonstrate skills and knowledge to:</p> <ul style="list-style-type: none"> • identify sources and methods for obtaining opals, advantages and disadvantages of each, and the accepted procedures and protocols for obtaining rough gem • obtain rough opal
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • sources of gem • industry protocol and ethics • Potential markets.
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • contacting sellers and bargain for rough gem • effectively negotiating to obtain gem • showing respect when communicating with people from diverse backgrounds • working with people from diverse backgrounds • critical thinking and analytical skills to:

	<ul style="list-style-type: none"> • investigating sources and markets for rough opal • assessing the value of a parcel or individual stone • initiative and enterprise skills to negotiate for opals and comply with accepted protocols and ethics • problem-solving skills to handle contingencies and finalise interaction • Numeracy skills to negotiate price in obtaining opals.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Slab /Trim and Polish Gemstone Materials
Unit Code	MIN LAP2 03 0114
Unit Descriptor	This Unit covers the acquisition of rough, slabbing, polishing, cleaning and stocking of gem material.

Elements	Performance Criteria
1.1 Prepare for Work	<p>1.1 Plan / End result is determined per job order.</p> <p>1.2 Occupational Health and Safety (OHS) requirements and the discipline of the workplace are adhered to throughout the process.</p> <p>1.3 Task is planned and sequenced in conjunction with other slabbing processes.</p> <p>1.4 Tools and equipment are selected and checked for serviceability.</p> <p>1.5 Material to be slabbed is acquired per job order.</p> <p>1.6 Equipment and work area is cleaned as practiced in the industry.</p>
1.2 Slab stone.	<p>2.1 Coolant is checked and filled if required.</p> <p>2.2 Blades are checked and maintained or replaced if required.</p> <p>2.3 Saws are loaded.</p> <p>2.4 Vices are double checked for firmness.</p> <p>2.5 Pump or coolant delivery system is checked.</p> <p>2.6 Saw is kept on till the cut is through.</p> <p>2.7 Saw is stopped manually if so designed or needed.</p> <p>2.8 Slab is removed from saw.</p> <p>2.9 Slab is immersed in an appropriate cleaner.</p> <p>2.10 Slabbed material is rinsed and dried as required.</p> <p>2.11 Slabbed material is documented per job order.</p>
1.3 Clean up Saw Area.	<p>3.1 Work area is cleared, mopped, equipment cleaned.</p> <p>3.2 Waste is disposed off or recycled in accordance with environmentally safe practices and workplace and trade procedures.</p>
1.4 Prepare Lapping Machine	<p>3.3 Lapping machine and laps are prepared.</p> <p>3.4 Grits and polishing compounds are acquired.</p> <p>3.5 Laps are charged with appropriate grit based on the</p>

	smoothness of the saw cut.		
1.5 Rough Grind the Slabbed Stone	<p>5.1 Machine is adjusted to spirit level using adjustment, if available, or physically.</p> <p>5.2 Appropriate grit and water are measured to acceptable consistency.</p> <p>5.3 Lapping machine is loaded with the appropriate amount of grit/water mixture.</p> <p>5.4 Viscosity of the grit/water mixture is checked.</p> <p>5.5 Slabbed stone(s) is/are loaded on to the laps.</p> <p>5.6 Stone is weighed by putting on weight to provide the right friction between the lap and the stone.</p> <p>5.7 (Ring) guard is put on around the individual stone(s) to protect the pieces from banging each other.</p> <p>5.8 Machine is turned on.</p> <p>5.9 Slab is checked time and again for a sound grind.</p> <p>5.10 Slab(s) is/are removed when done.</p> <p>5.11 Slab(s) is/are cleaned to remove grits and dirt.</p>		
1.6 Smooth grind Slabbed Stone	<p>6.1 Grit and water are measured to appropriate consistency.</p> <p>6.2 Lapping machine is loaded with 220 grit/water mixture.</p> <p>6.3 Viscosity of the grit/water mixture is checked.</p> <p>6.4 Slabbed stone(s) is is/are loaded on to the laps.</p> <p>6.5 Stone is weighed by putting on weight to provide the right friction between the lap and the stone.</p> <p>6.6 (Ring) guard is put on around the individual stone(s) to protect the pieces from banging each other.</p> <p>6.7 Machine is turned on.</p> <p>6.8 Slab is checked time and again for a sound grind.</p> <p>6.9 Slab(s) is/are) removed when done.</p> <p>6.10 Slab(s) is/are cleaned to remove grits and dirt.</p>		
1.7 Polish Smooth ground lapped stone.	<p>7.1 Polishing pad is put on the flat lap.</p> <p>7.2 The pad is charged with a polishing agent.</p> <p>7.3 The machine is loaded with slabs.</p> <p>7.4 Ring guards are put on around the slabs to protect the pieces from banging each other.</p> <p>7.5 Machine is started.</p> <p>7.6 Slab is checked time and again for the required polish.</p> <p>7.7 The polished slabs are removed when done</p>		
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1.8 Cleanup the polished piece.	<p>8.1 The polished pieces are washed with water and detergent in a pail or appropriate container.</p> <p>8.2 The pieces are dried, weighed and or measured as appropriate.</p>
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Variable	Range
Occupational Health and Safety (OHS)	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • covered shoes • appropriate use of tools and equipment • workplace environment and safety, • appropriate handling of materials, • use of firefighting equipment, use of first aid equipment • hazard control and hazardous materials and substances • personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
Tools, Equipment and Consumables	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Slab saws • The lapping machine • Boxes • Weights and Scales • Measuring Tapes or Rules • Weights • Scales • Gauges • Spanners • Screw Drivers • Boxes • Bags • Light Source • Pails / Buckets • Materials such as: <ul style="list-style-type: none"> ➤ Blades ➤ Labels ➤ Markers ➤ Lubricants and Coolants ➤ Soap ➤ Water ➤ Scribes (Aluminum pencil, brass pencil, etc.) ➤ Polishing Compounds ➤ Laps ➤ Polishing Pads ➤ Waxes ➤ Grits ➤ Soap ➤ Cleaning agents ➤ Water

Evidence Guide	
Critical aspects of Competence	<p>Demonstrate skills e and knowledge in:</p> <ul style="list-style-type: none"> • The SI system of measurement • The Standard System of Measurement • Ability to maintain and clean equipment • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards • Identifying different stones and their hardness • Application of industry/organizational quality procedures and processes within the context of slabbing and polishing stones • Implementation of safe work methods
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • The SI system of Measurement • The Standard System of Measurement • Workplace and equipment safety requirements including • Relevant statutory regulation • Knowledge of stones and their physical characteristics • Knowledge of consumables (lapidary supplies) • Market driven quality procedures and processes within the context of slabbing stone. • Equipment maintenance • Safe work methods
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Work area is cleared, mopped, equipment cleaned. • Polishing pad is put on the flat lap. • Viscosity of the grit/water mixture is checked.
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level II	
Unit Title	Identify and Assess Gem Materials
Unit Code	<u>MIN LAP2 04 0114</u>
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to identify opal from various sources, describe the type of opal and applies the principles of valuation to different types of opal, based on sound understanding of how opal is formed, where it is found and the characteristics of the gemstones.

Elements	Performance Criteria
1. Develop knowledge of opal geology.	<p>1.1 The geological conditions suitable for the formation of opal are identified and the theories of technique applied opal formation.</p> <p>1.2 Sources of opal worldwide and locations of opal fields are determined.</p>
2. Apply the principles of grading and quality assessment to opal.	<p>2.1 The principles used for valuing opals are identified in terms of base and background materials colours, predominant colours and patterns, and other factors that influence an opal's value</p> <p>2.2 Principles of valuing are applied to determine the potential value of opals</p>
3. Distinguish natural opal from man-made varieties.	<p>3.1 The gemmological characteristics of opal are determined based on knowledge of varieties of opal found worldwide.</p> <p>3.2 Gemmological tool and equipment are selected to authenticate natural opal.</p> <p>3.3 The selected instruments are used to authenticate opal with safety.</p> <p>3.4 Substances used to simulate opal and synthetic opal-like substances are identified and their characteristics compared to natural opal.</p>
4. Identify and describe the different types of opal.	<p>4.1 Opals of various types are identified and described using correct terminology.</p> <p>4.2 A general awareness of types of opal treatments is developed and determined which consideration acceptable in the industry.</p>

Variable	Range
Techniques	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • anodising • binding • casting

	<ul style="list-style-type: none"> • champlevé • cloisonné • embossing • enamelling • engraving • etching • fabrication • forging • fusion • granulation • grinding • lathe work • mould making • patination • plique-a-jour • polishing and finishing • pressing and forming • reticulation • soldering • stone setting • A combination of techniques.
Materials	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • das • fabrics • fibers • fimo • metal objects • papier-mâché • plastic • twine • found objects • gem stones • metals: <ul style="list-style-type: none"> ➤ brass ➤ copper ➤ guiding metal ➤ pewter ➤ silver • natural objects: <ul style="list-style-type: none"> ➤ bones ➤ clay ➤ feathers ➤ palm fronds ➤ seeds ➤ shells ➤ twigs ➤ vines

	➤ Wood.		
Tools and equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • hand tools: <ul style="list-style-type: none"> ➤ brushes ➤ burr ➤ centre punch ➤ clamps ➤ files ➤ hammers ➤ knives ➤ mallets ➤ piercing saw and range of blades ➤ pliers ➤ scissors ➤ scribe ➤ snips ➤ tongs ➤ tweezers • jewellery bench • measuring devices • measuring tools • modelling tools and sets • needles • power tools, such as sander • protective clothing • specialised items for: <ul style="list-style-type: none"> ➤ embossing ➤ engraving ➤ gluing ➤ piercing ➤ silver smithing ➤ soldering ➤ welding. 		
Safety	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • federal, state and territory legislation, regulations and standards • personal protection • recycling • Safe disposal of waste. 		
Presentation considerations	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • availability of space • cost • practical considerations • presentation context • Timeframe. 		
Extending capabilities through	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • exploring the full potential of the art form • Innovation. 		
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experimentation	
Research	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • approaching individuals with relevant expertise • attending lectures and talks • conducting material and technical experiments and tests • seeking out information in books, journals, newspapers • searching the internet • Visiting exhibitions and museums.
Ideas	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • artistic aspirations • current capability with techniques • historical and theoretical contexts • subject matter or theme for the work, such as: <ul style="list-style-type: none"> ➤ built environment ➤ land and place ➤ natural world ➤ political, cultural and social issues ➤ the body ➤ Spiritual concerns.
Intellectual property requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • extent to which the work may be used • form of acknowledgement or credit • procedures for seeking permission to use the work of others, including systems for the administration of copyright • Protocols for the adaptation of work by others.
Professional potential	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • cost of production • existence of an established market • how to promote or sell the work • market trends • Professional development.
Criteria	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • client and user expectations • duration • environment in which textile work will be viewed • materials • quality of final product • techniques • timelines • Tools.
Process followed to refine ideas	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • adjustment to take account of elements and principles of design • adjustment to subject matter or theme • Adjustment to use extended capabilities of the technique.
Sources of supply	May include but not limited to:

	<ul style="list-style-type: none"> • commercial outlets • found objects and materials • manufacturing or factory waste • Nature.
Cost and other constraints	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • availability of materials and tools • budgeting • sponsorship • Timeframe.

Evidence Guide

Critical aspects of Competence	<p>Demonstrate and skills knowledge to:</p> <ul style="list-style-type: none"> • identify and describe the characteristics of the different types of opal using correct terminology and equipment • Apply principles of valuation and determine the authenticity of opal materials.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • sources of information on the opal industry • valuation systems for opal • functions of various opal industry sectors, including mining dealing and manufacturing jewellery • accepted terminology for describing opal • Safety issues associated with the use of gemmological instruments
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • communication skills to describe and document opal identification information • literacy skills to interpret information about opals • planning and organizing skills to organize basic work practices • numeracy skills to apply valuation principles • technical skills to use gemmological instruments • Technology skills to find information on opals.
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level II	
Unit Title	Handle and Store Rough and Cut Gemstones
Unit Code	MIN LAP2 05 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to handle and store rough and cut opal in a manner that minimizes damage and loss.

Elements	Performance Criteria
1. Work with opal	<p>1.1 Source, origin and types of rough opal are documented.</p> <p>1.2 Appropriate storage conditions and locations are identified for various types and classes of opal.</p> <p>1.3 Ways in which damage might occur are identified to rough and cut opal and preventative measures taken.</p> <p>1.4 Opals are graded if required.</p> <p>1.5 Opals are weighed and bagged and apron is stored.</p>
2. Use processes that minimise loss and theft	<p>2.1 Areas of risk are identified and process employed is evaluated for handling and processing gems.</p> <p>2.2 Strategies are determined for minimising risk and safeguarding opals.</p> <p>2.3 Risk minimisation strategy is implemented.</p> <p>2.4 All facts about the opals and all procedures are documented thoroughly.</p>
3. Control stock	<p>3.1 An appropriate stock control system is identified.</p> <p>3.2 Stock control procedures are followed to monitor and manage stock.</p> <p>3.3 Records of stock are maintained.</p>

Variable	Range
Types of rough opal	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • composite natural opal – doublets, triplets, mosaic and chip opals • natural opal type 1 – opal in one piece in its natural state apart from cutting and polishing • natural opal type 2 – opal naturally attached to the host rock – boulder opal • natural opal type 3 – opal intimately diffused as infilling in pores or between the grains of the host rock; matrix opal • varieties of opal: (N1 to N9 represents gradation from black to white in approximately 10% intervals)

	<ul style="list-style-type: none"> • black – opal which shows a play of colour within or on a black or very dark body tone (N1, N2, N3, N4) • dark – opal which shows a play of colour within or on a dark body tone (N5, N6) • light – opal which shows a play of colour within or on a light body tone (N7, N8, N9).
Appropriate storage conditions and locations	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • depending on the value: in safe or in designated locked cupboard • display boxes and pockets • display cases • individually bagged • humidified atmosphere • Safes and deposit boxes.
Ways in which damage might occur	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • dehydration • exposure to halogen lights • extremes of temperature • general wear and tear • immersion in water • rough handling • Surface damage and scratching.
Areas of risk	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • lack of documentation • misplacement • Theft.
Strategies	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • alarm systems • banks (deposit boxes) • display cases • insurance • lighting • photographing • safes • scanning • security locks • systematic approach to storage and handling • thorough recording and documenting • use of standard procedures for handling, storage and documentation.
Stock control system	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • manual or electronic • very simple in the case of small businesses.
Stock	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • cutting and polishing consumables • equipment for production cutting • rough or cut opal.

Preventative measures	May include but not limited to: <ul style="list-style-type: none"> • humidifying atmosphere • Keeping in bags.
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Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> • identify, explain and apply safe and appropriate procedures for the handling and storage of rough or cut and polished opal • Evaluate the areas where there is risk of loss and theft and follow risk minimising procedures.
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> • origin of the types and forms of opal • types of cutting styles • procedures for handling and storing opal • areas of risk of theft
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> • communication skills to document key information • critical thinking and analytical skills to assess areas of risk • literacy skills to document operational information • planning and organising skills to organise storage and stock control • problem-solving skills to monitor situations and adjust actions accordingly • numeracy skills to use stock control systems and make basic calculations • Technical skills to use appropriate handling and storage
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test / Oral Questioning • Observation / Demonstration
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Lapidary Level II	
Unit Title	Cabbing (Make Cabochon)
Unit Code	MIN LAP2 06 0114
Unit Descriptor	This Unit covers the acquisition of gemstone material, the slabbing, cabbing, cleaning and documenting processes. The unit requires selection of material, the sawing, cabbing cleaning and documenting processes of making en cabochon.

Elements	Performance Criteria
1. Prepare for Work	<p>1.1 Plan / End result is determined.</p> <p>1.2 Safety requirements and the discipline of the workplace are adhered to throughout the process.</p> <p>1.3 Task is planned and sequenced in conjunction with other slabbing/trimming and cabbing processes.</p> <p>1.4 Tools and equipment are selected and checked for serviceability.</p> <p>1.5 Material to be slabbed or trimmed and cabbed is acquired.</p> <p>1.6 Equipment and work area is cleaned.</p> <p>1.7 Rough material is prepared, selected and weighed.</p> <p>1.8 Coolant in saw(s) is checked and filled if required.</p> <p>1.9 Blades are checked and maintained or replaced if required.</p> <p>1.10 Saws are loaded with stones.</p> <p>1.11 Vices (if available) are double checked for firmness to assure that the blade runs straight.</p> <p>1.12 Pump or coolant delivery system is checked.</p> <p>1.13 Caber is checked for proper functionality.</p> <p>1.14 Grinding wheels on (for) caber are checked.</p> <p>1.15 Coolant for the caber is filled.</p> <p>1.16 Templates, dop sticks, glues and wax are acquired from stock.</p> <p>1.17 Doping pots are started.</p>
2. Slab stone to be cabbed.	<p>2.1 Saw is loaded with material to be slabbed.</p> <p>2.2 Saw is started to begin cutting the loaded HCR material.</p> <p>2.3 Saw is kept on till the cut is through.</p> <p>2.4 Saw is stopped (manually if so designed or needed).</p>

	<p>2.5 Cut slab is removed from saw.</p> <p>2.6 Slab is immersed in an appropriate cleaner.</p> <p>2.7 Saw area is cleaned up.</p>
3. Cab HCR Material	<p>3.1 The slabbed material is studied thus the qualifying behaviors like patterns and colors, etc., are analyzed.</p> <p>3.2 Slab is marked or outlined using appropriate size of a template. Free formed cabs are excepted]</p> <p>3.3 Rough material is sawed to size (if required).</p> <p>3.4 Stone is preformed to close to the template size and shape or dop Stone.</p> <p>3.5 The outline is ground to template size.</p> <p>3.6 Pre-formed stone is doped or doped stone is preformed.</p> <p>3.7 Preformed gemstone is ground and sanded.</p> <p>3.8 The dome of the cab is rough ground as close to the final shape as possible.</p> <p>3.9 The dome is sanded to smooth down roughness.</p> <p>3.10 The entire cab is polished to the required result.</p> <p>3.11 Finished HCR is cleaned.</p> <p>3.12 HCR is documented per as job order.</p>

Variable	Range
Occupational Health and Safety (OHS)	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Covered toes shoes • appropriate use of tools and equipment • workplace environment and safety, • appropriate handling of materials, • use of firefighting equipment, use of first aid equipment • hazard control and hazardous materials and substances • personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
Tools, Equipment and Consumables,	<ul style="list-style-type: none"> • May include but not limited to: • Slab saws / Trim saws • The Grinder (Caber) • Scales • Bags • Loupes • Gauges • Boxes • Light Source • Pails / Buckets

	<ul style="list-style-type: none"> • Materials • Blades • Markers, Scribes (Aluminum pencil, brass pencil, etc.) • Waxes and glues • Grinding Wheels • Polishing Pads • Polishing Wheels • Polishing Compounds • Lubricants and Coolants • Soap • Water • Stones/ Rocks
Type and source of Information	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Verbal or written and graphical instructions (books, magazines, pamphlets, handouts, videos, etc.) • signage, work and graphical /plans/ specifications • job orders, work bulletins, charts and hand drawings, memos, material safety • data sheets , diagrams or sketches • safe work procedures relating to tumbling and lapidary • regulatory/ legislative requirements, particularly those pertaining to lapidary, OHS and environmental requirements • organization work specifications and requirements • instructions issued by authorized organizational or external personnel • relevant market standards

Evidence Guide

Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • The SI system of measurement • The Standard System of Measurement • Ability to maintain and clean equipment • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards • Identifying different stones and their hardness • Application of industry/organizational quality procedures and processes within the context of tumbling stones • Implementation of safe work methods
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • The SI system of Measurement • The Standard System of Measurement • Workplace and equipment safety requirements • Safe work methods should include: • The Slab saw such as: <ul style="list-style-type: none"> ➤ Shafts and bearings ➤ The Saw Carriage ➤ Carriage Feeds

	<ul style="list-style-type: none"> ➤ The Coolant and Tank ➤ Splash Hoods ➤ The Vice ➤ The Switches • The Diamond Blade like: <ul style="list-style-type: none"> ➤ Notch-rim blades ➤ Sintered-rim blades • Operation of the Saw are: <ul style="list-style-type: none"> ➤ Slabbing Saw Speeds ➤ Clamping the Stone ➤ Feeding • Relevant statutory regulation • Knowledge of stones and their physical characteristics • Knowledge of consumables (lapidary supplies) • Market driven quality procedures and processes within the context of slabbing and capping stone. • Equipment maintenance
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • Stone is preformed to close to the template size and shape or dop Stone • The Standard System of Measurement • Ability to maintain and clean equipment
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test / Oral Questioning • Observation / Demonstration
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level II	
Unit Title	Bead Making
Unit Code	MIN LAP2 07 0114
Unit Descriptor	This Unit covers the acquisition of rough, slabbing, bead making, cleaning and stocking of HCR material. This Unit covers the acquisition of rough the slabbing of stones and the process of making beads to the required specification.

Elements	Performance Criteria
1. Prepare for Work	<p>1.1 Plan / end result is determined per job order.</p> <p>1.2 Safety requirements and the discipline of the workplace are adhered to throughout the process.</p> <p>1.3 Task is planned and sequenced in conjunction with other slabbing and bead making processes.</p> <p>1.4 Tools and equipment are selected and checked for serviceability.</p> <p>1.5 Rough material is prepared, selected and weighed.</p> <p>1.6 Material to be slabbed and turned into bead is acquired per job order.</p> <p>1.7 Caber is checked for proper functionality.</p> <p>1.8 Grinding wheels on (for) caber are checked.</p> <p>1.9 Equipment and work area is cleaned as practiced in the industry.</p> <p>1.10 Equipment is maintained per schedule and / or as required.</p>
2. Slab stone.	<p>2.1 Coolant is checked and filled if required.</p> <p>2.2 Blades are checked and maintained or replaced if required.</p> <p>2.3 Saws are loaded.</p> <p>2.4 Vices are double checked for firmness.</p> <p>2.5 Pump or coolant delivery system is checked.</p> <p>2.6 Saw is kept on till the cut is through.</p> <p>2.7 Saw is stopped manually if so designed or needed.</p> <p>2.8 Slab is removed from saw.</p> <p>2.9 Slab is immersed in an appropriate cleaner.</p> <p>2.10 Slabbed material is rinsed and dried as required.</p> <p>2.11 Slabbed material is documented per job order.</p>

3. Clean up Saw Area.	3.1 Work area is cleared, mopped, equipment cleaned. 3.2 Waste is disposed off or recycled in accordance with environmentally safe practices and workplace and trade procedures.
4. Make HCR Material Beads	4.1 Rough is preformed or trimmed close to the required size. 4.2 Trimmed or preformed rough is sanded to the specification at hand. 4.3 Sanded bead is polished as required. 4.4 Polished bead is drilled to the specification. 4.5 HCR is cleaned. 4.6 Documentation is prepared as per job order.

Variable	Range
Tools, equipment and consumables	May include but not limited to: <ul style="list-style-type: none"> • Slab saws • Weights and Scales • Measuring Tapes or Rules • Weights • Scales • Gauges • Boxes • Bags • Light Source • Pails / Buckets • Cabbers • Drills • Sorting Trays • Materials <ul style="list-style-type: none"> ➢ Blades ➢ Grinding Wheels ➢ Polishing Wheels ➢ Polishing Pads ➢ Polishing Compounds ➢ Drill Bits and / or Grits • Labels • Markers • Lubricants • Soap • Water • Stones/ Rocks
Type and source of Information	May include but not limited to: <ul style="list-style-type: none"> • Verbal or written and graphical instructions (books, magazines, pamphlets, handouts, videos, etc.)

	<ul style="list-style-type: none"> • signage, work and graphical /plans/ specifications • job orders, work bulletins, charts and hand drawings, memos, material safety • data sheets , diagrams or sketches • safe work procedures relating to bead making procedures. • regulatory/ legislative requirements, particularly those pertaining to lapidary, OHS and environmental requirements • organization work specifications and requirements • instructions issued by authorized organizational or external personnel • relevant market standards
Occupational Health and Safety (OHS)	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • covered shoes • appropriate use of tools and equipment • workplace environment and safety, • appropriate handling of materials, • use of firefighting equipment, use of first aid equipment • hazard control and hazardous materials and substances • personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • The SI system of measurement • The Standard System of Measurement • Ability to maintain and clean equipment • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards • Identifying different stones and their hardness • Application of industry/organizational quality procedures and processes within the context of slabbing and polishing stones • Implementation of safe work methods
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • The SI system of Measurement • The Standard System of Measurement • Workplace and equipment safety requirements including • Relevant statutory regulation • Knowledge of stones and their physical characteristics • Knowledge of consumables (lapidary supplies) • Market driven quality procedures and processes within the context of making beads. • Equipment maintenance • Safe work methods

Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> • The SI system of measurement • The Standard System of Measurement • Ability to maintain and clean equipment • Applying workplace and equipment safety requirements including relevant statutory regulations, and standards
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test / Oral Questioning • Observation / Demonstration
Context of assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Undertake Routine Operational Maintenance of Machinery
Unit Code	<u>MIN LAP2 08 0114</u>
Unit Descriptor	This unit describes the performance outcome, skills and knowledge required to perform routine maintenance and rectify minor faults in opal cutting and polishing machinery and equipment.

Elements	Performance Criteria
1. Perform operational maintenance	<p>1.1 Basic operational maintenance on the equipment and machinery are performed according to manufacturers' guidelines.</p> <p>1.2 Equipment is adjusted, cleaned and stored consistent with manufacturers' specifications.</p>
2. Rectify common mechanical faults	<p>2.1 Mechanical faults are diagnosed and, where they do not require specialist attention is rectified according to manufacturers' guidelines.</p> <p>2.2 Tools appropriate to each task are selected and safe work practices followed.</p> <p>2.3 Where complex faults are identified and assistance is sought from manufacturer or technical experts.</p>
3. Maintain a clean and tidy workshop and document operational maintenance	<p>3.1 The workshop is maintained as an environment that is clean and free from contaminants.</p> <p>3.2 Hazardous materials are identified and removed according to manufacturers' instructions.</p> <p>3.3 Procedures and update machinery and equipment log books are documented where required.</p>

Variable	Range
Operational maintenance	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Daily, weekly, monthly, quarterly and yearly servicing schedules.
Equipment and machinery	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • bench grinder 6" or 8" • combination units for grind, sand and polish • diamond grinding, sanding and polishing units • drum or belt sanders • dry sanding units • free-hand saws • grinding arbours with belt drive • leather or felt polishing units • multi-blade saws • slab saws

	<ul style="list-style-type: none"> • trim saws • Wet sanding units.
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Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • perform operational maintenance and make routine adjustments to equipment and machinery following manufacturer guidelines • diagnose and rectify minor faults using appropriate tools and working safely
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • servicing characteristics of machinery and equipment • fault finding techniques in mechanical devices • recording systems for machinery use.
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • communication skills to: <ul style="list-style-type: none"> • seek assistance and ask questions where required • document procedures and update log books • problem-solving skills to: <ul style="list-style-type: none"> • diagnose mechanical faults and, where they do not need special attention, rectify them according to manufacturer guidelines • identify hazards and remove them according to manufacturer guidelines • numeracy skills to use numerical features of machinery • self-management skills to perform operational maintenance regularly according to manufacturer guidelines • technical skills to: <ul style="list-style-type: none"> • perform scheduled maintenance • rectify common mechanical faults • maintain a workshop environment • Use appropriate tools.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Participate in Workplace Communication
Unit Code	MIN LAP2 09 0114
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

Elements	Performance Criteria
1. Obtain and convey workplace information	<p>1.1 Specific and relevant information is accessed from appropriate sources.</p> <p>1.2 Effective questioning, active listening and speaking skills are used to gather and convey information.</p> <p>1.3 Appropriate medium is used to transfer information and ideas.</p> <p>1.4 Appropriate non- verbal communication is used.</p> <p>1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed.</p> <p>1.6 Defined workplace procedures for the location and storage of information are used.</p> <p>1.7 Personal interaction is carried out clearly and concisely.</p>
2. Participate in workplace meetings and discussions	<p>2.1 Team meetings are attended on time.</p> <p>2.2 Own opinions are clearly expressed and those of others are listened to without interruption.</p> <p>2.3 Meeting inputs are consistent with the meeting purpose and established protocols.</p> <p>2.4 Workplace interactions are conducted in a courteous manner.</p> <p>2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to.</p> <p>2.6 Meetings outcomes are interpreted and implemented.</p>
3. Complete relevant work related documents	<p>3.1 Range of forms relating to conditions of employment is completed accurately and legibly.</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents.</p> <p>3.3 Basic mathematical processes are used for routine calculations.</p> <p>3.4 Errors in recording information on forms/ documents are identified and properly acted upon.</p>

	3.5 Reporting requirements to supervisor are completed according to organizational guidelines.
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Variable	Range
Appropriate sources	May include but not limited to: <ul style="list-style-type: none"> • Team members • Suppliers • Trade personnel • Local government • Industry bodies
Medium	May include but not limited to: <ul style="list-style-type: none"> • Memorandum • Circular • Notice • Information discussion • Follow-up or verbal instructions • Face to face communication
Storage	May include but not limited to: <ul style="list-style-type: none"> • Manual filing system • Computer-based filing system
Protocols	May include but not limited to: <ul style="list-style-type: none"> • Observing meeting • Compliance with meeting decisions • Obeying meeting instructions
Workplace interactions	May include but not limited to: <ul style="list-style-type: none"> • Face to face • Telephone • Electronic and two way radio • Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
Forms	May include but not limited to: <ul style="list-style-type: none"> • Personnel forms, telephone message forms, safety reports

Evidence Guide	
Critical Aspects of Competency	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> • Prepare written communication following standard format of the organization • Access information using communication equipment • Make use of relevant terms as an aid to transfer information effectively • Convey information effectively adopting the formal or informal communication
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • Effective communication • Different modes of communication • Written communication

	<ul style="list-style-type: none"> • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Do basic mathematical processes of addition, subtraction, division and multiplication • relate to people of social range in the workplace • Gather and provide information in response to workplace Requirements
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Work in Team Environment
Unit Code	MIN LAP2 10 0114
Unit Descriptor	This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

Elements	Performance Criteria
1. Describe team role and scope	<p>1.1 The role and objective of the team are identified from available sources of information.</p> <p>1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.</p>
2. Identify own role and responsibility within team	<p>2.1 Individual role and responsibilities within the team environment are identified.</p> <p>2.2 Roles and responsibility of other team members are identified and recognized.</p> <p>2.3 Reporting relationships within team and external to team are identified.</p>
3. Work as a team member	<p>3.1 Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives.</p> <p>3.2 Effective and appropriate contributions are made to complement team activities and objectives, based on individual skills and competencies and workplace context.</p> <p>3.3 Protocols are observed in reporting using standard operating procedures.</p> <p>3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.</p>

Variable	Range
Role and objective of team	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Work activities in a team environment with enterprise or specific sector • Limited discretion, initiative and judgment maybe demonstrated on the job, either individually or in a team environment
Sources of information	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Standard operating and/or other workplace procedures • Job procedures • Machine/equipment manufacturer's specifications and instructions
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	<ul style="list-style-type: none"> • Organizational or external personnel • Client/supplier instructions • Quality standards • OHS and environmental standards
Workplace context	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Work procedures and practices • Conditions of work environments • Legislation and industrial agreements • Standard work practice including the storage, safe handling and disposal of chemicals • Safety, environmental, housekeeping and quality guidelines

Evidence Guide

Critical aspects of competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Operated in a team to complete workplace activity • Worked effectively with others • Conveyed information in written or oral form • Selected and used appropriate workplace language • Followed designated work plan for the job • Reported outcomes
Underpinning Knowledge and Attitude	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Communication process • Team structure • Team roles • Group planning and decision making
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Communicate appropriately, consistent with the culture of the workplace
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level II	
Unit Title	Develop Business Practice
Unit Code	MIN LAP2 11 0114
Unit Descriptor	This unit specifies the outcomes required to establish a business operation from a planned concept. It includes researching the feasibility of establishing a business operation, planning the setting up of the business, implementing the plan and reviewing operations once commenced.

Elements	Performance Criteria
1. Identify business opportunity	<p>1.1 Business opportunities are investigated and identified.</p> <p>1.2 Feasibility study is undertaken to determine likely business viability.</p> <p>1.3 Market research on product or service is undertaken.</p> <p>1.4 Assistance with feasibility study of specialist and relevant parties is sought as required.</p> <p>1.5 Impact of emerging or changing technology including e-commerce, on business operations is evaluated.</p> <p>1.6 Practicability of business opportunity is assessed in line with perceived risks, returns sought and resources available.</p> <p>1.7 Business plan is completed for operation.</p>
2. Identify personal business skills	<p>2.1 Financial and business skills available are identified and taken into account when business opportunities are researched.</p> <p>2.2 Personal skills/attributes are assessed and matched against those perceived as necessary for a particular business opportunity.</p> <p>2.3 Business risks are identified and assessed according to resources available and personal preferences.</p>
3. Plan for establishment of business operation	<p>3.1 Business structure and operations are determined and documented.</p> <p>3.2 Procedures are developed and documented to guide operations.</p> <p>3.3 Financial backing is secured for business operation.</p> <p>3.4 Business legal and regulatory requirements are identified and complied.</p> <p>3.5 Human and physical resources required to commence business operation are determined.</p> <p>3.6 Recruitment strategies are developed and implemented.</p>

<p>4. Implement establishment plan</p>	<p>4.1 Marketing of business operation is undertaken.</p> <p>4.2 Physical and human resources are obtained to implement business operation.</p> <p>4.3 Operational unit is established to support and coordinate business operation.</p> <p>4.4 Monitoring process is developed and implemented for managing operation.</p> <p>4.5 Legal documents are carefully maintained and relevant records are kept and updated to ensure validity and accessibility.</p> <p>4.6 Contractual procurement rights for goods and services including contracts with relevant people, negotiated and secured as required in accordance with the business plan.</p> <p>4.7 Options for leasing/ownership of business premises identified and contractual arrangements are completed in accordance with the business plan.</p>
<p>5. Review implementation process</p>	<p>5.1 Review process for implementation of business operation is developed and implemented.</p> <p>5.2 Improvements in business operation and associated management process are identified.</p> <p>5.3 Identified improvements are implemented and monitored for effectiveness.</p>

Variable	Range
<p>Business opportunities</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • expected financial viability • skills of operator • amount and types of finance available • returns expected or required by owners • likely return on investment • finance required • lifestyle issues
<p>Business viability</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • opportunities available • market competition • timing/ cyclical considerations • skills available • resources available • location and/ or premises available • risk related to a particular business opportunity, especially in regard to Occupational Health and Safety and • environmental considerations
<p>Specialist and relevant parties</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Chamber of commerce

	<ul style="list-style-type: none"> • Financial planners and financial institution representatives, business planning specialists and marketing specialists • accountants • lawyers and providers of legal advice • government agencies • industry/trade associations • online gateways • business brokers/business consultants
Personal skills/attributes	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • technical and/ or specialist skills • business knowledge and skills • entrepreneurship • willingness to take risks
Business risks	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • occupational health and safety and environmental considerations • relevant legislative requirements • security of investment • market competition • security of premises/ location • supply and demand • resources available
Human and physical resources	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • software and hardware • office premises • communications equipment • specialist services through outsourcing, contracting and consultancy • staff • vehicles
Operational unit	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • office location staffed with required personnel and equipped to service and support business • home-based site or other location such as leased or owned property
Legal documents	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • partnership agreements, constitution documents, statutory books for companies (Register of Members, Register of Directors and Minute Books), Certificate of Incorporation, Franchise Agreements and financial documentation, appropriate software for financial records • recordkeeping including personnel, financial, taxation, OHS and environmental
Contracts with relevant people	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • owners, suppliers, employees, landlords, agents, distributors, customers or any person with whom the business has, or seeks to have, a performance-based relationship

Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • that a business operation has been planned and implemented from initial research into feasibility of the business and completion of the plan, through to implementing the plan and commencing operations • the ability to evaluate the results of research and assess the likely viability and practicability of a business opportunity, taking into account the current business/market climate and resources available
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Federal and regional government legislative requirements affecting business operations, especially in regard to Occupational Health and Safety (OHS), equal employment opportunity (EEO), industrial relations and anti-discrimination • Technical or specialist skills relevant to the business operation • Financing options • Business systems and operations • Relevant marketing, management, sales and financial concepts • Methods for researching business opportunities • Principles of risk management relevant to the business • Methods of identifying relevant specialist services to complement the business • Forms and administrative systems • Services available and charges • Planning and control systems (sales, • Advertising and promotion, distribution and logistics • Financial recording systems • Legal rights and responsibilities • Record keeping duties • Operational factors relating to the business (provision of professional services, products)
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Literacy skills to interpret legal requirements, company policies and procedures and immediate, day-to-day demands • Marketing skills • Business planning skills • Entrepreneurial skills • Problem-solving skills • OHS skills • Time management skills • Belief in services and products offered by the business

	<ul style="list-style-type: none"> • Communication skills including questioning, clarifying, reporting, and giving and receiving constructive feedback • Technical and analytical skills to interpret business documents, reports and financial statements and projections • Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • Problem solving skills to develop contingency plans • Using computers and software packages to record and manage data and to produce reports • Literacy skills to enable interpretation of business information, numeracy skills for data analysis to aid research • Research skills to identify a business opportunity and to conduct a feasibility study • Analytical skills to assess personal attributes and to identify business risks • Observation skills for identifying appropriate people, resources and to monitor work
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level II	
Unit Title	Standardize and Sustain 3S
Unit Code	MIN LAP2 12 0114
Unit Descriptor	This unit of competence covers the knowledge, skills and attitudes required by worker to standardize and sustain 3S to his/her workplace. It covers responsibility for the day- to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	<p>1.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>1.2 Job specifications are read and interpreted following working manual.</p> <p>1.3 OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>1.4 Safety equipment and tools are identified and checked for safe and effective operation.</p> <p>1.5 Tools and equipment are prepared and used to implement 3S.</p>
2. Standardize 3S.	<p>2.1 Plan is prepared and used to standardize 3S activities.</p> <p>2.2 Tools and techniques to standardize 3S are prepared and implemented based on relevant procedures.</p> <p>2.3 Checklists are followed for standardize activities and reported to relevant personnel.</p> <p>2.4 The workplace is kept to the specified standard.</p> <p>2.5 Problems are avoided by standardizing activities.</p>
3. Sustain 3S.	<p>3.1 Plan is prepared and followed to standardize 3S activities.</p> <p>3.2 Tools and techniques to sustain 3S are discussed, prepared and implemented based on relevant procedures.</p> <p>3.3 Workplace is inspected regularly for compliance to specified standard and sustainability of 3S techniques.</p> <p>3.4 Workplace is cleaned up after completion of job and before commencing next job or end of shift.</p> <p>3.5 Situations are identified where compliance to standards</p>

	<p>is unlikely and actions specified in procedures are taken.</p> <p>3.6 Improvements are recommended to lift the level of compliance in the workplace.</p> <p>3.7 Checklists are followed to sustain activities and reported to relevant personnel.</p> <p>3.8 Problems are avoided by sustaining activities.</p>
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Variable	Range
OHS requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • dust masks / goggles • glove • working cloth • first aid • safety shoes
Tools and equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • paint • hook • sticker • signboard • nails • shelves • chip wood • sponge • broom • pencil • shadow board/ tools board
Tools and	May include but not limited to:

techniques	<ul style="list-style-type: none"> • 5S Job Cycle Charts • Visual 5S • The Five Minute 5S • Standardization level checklist • 5S checklist • The five Whys and one How approach(5W1H) • Suspension • Incorporation • Use Elimination
Relevant procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Assign 3S responsibilities • Integrate 3S duties into regular work duties • Check on 3S maintenance level • OHS measures such as signage, symbols / coding and labeling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation
Reporting	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • verbal responses • data entry into enterprise database • brief written reports using enterprise report formats
Relevant personnel	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • supervisors, managers and quality managers • administrative, laboratory and production personnel • internal/external contractors, customers and suppliers
Tools and techniques	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps • 5S pocket manuals • 5S department/benchmarking tours • 5S months • 5S audit • Awarding system • Big cleaning day • Patrolling system may include: <ul style="list-style-type: none"> ➢ Top management Patrol ➢ 5S Committee members and Promotion office Patrol ➢ Mutual patrol ➢ Self-patrol ➢ Checklist patrol ➢ Camera patrol

Evidence Guide

Critical Aspects of	Demonstrates skills and knowledge to:
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Competence	<ul style="list-style-type: none"> • Discuss the relationship between Kaizen elements. • Standardize and sustain 3S activities by applying appropriate tools and techniques.
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Elements of Kaizen • Ways to improve Kaizen elements • Benefits of improving kaizen elements • Relationship between Kaizen elements • The fourth pillar of 5S • Benefits of standardizing and sustaining 3S • Procedures for standardizing and sustaining 3S activities • Tools and techniques to sustain 3S • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication
Underpinning Skills	<p>Demonstrates skills of:</p> <ul style="list-style-type: none"> • improving Kaizen elements by applying 5S • standardizing and sustaining procedures and techniques to avoid problems • technical drawing • procedures to standardizing 3S activities • analyzing and preparing shop layout of the workplace • standardizing and sustaining checklists • preparing and implementing tools and techniques to sustain 3S • working with others • reading and interpreting documents • observing situations • solving problems by applying 5S • communication skills • preparing labels, slogans, etc. • gathering evidence by using different means • using Kaizen board properly in accordance the procedure • reporting activities and results using report formats
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

NTQF Level III

Occupational Standard: Lapidary Level III	
Unit Title	Facet Semi- precious Gemstones
Unit Code	<u>MIN LAP3 01 0114</u>
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to use a faceting machine to facet semi-precious gemstones, including selecting material, pre-forming, and cutting and polishing a selected stone. The machine may be used to produce a traditional faceted gemstone and also to complete a range of other tasks, such as making cubes from opal material.

Elements	Performance Criteria
1. Set up faceting equipment	<p>1.1 Faceting machines are set up to manufacturers' specifications identifying machine components and laps.</p> <p>1.2 Manufacturers' maintenance checklist is completed.</p> <p>1.3 Index wheels are investigated for quill and main and critical angles identified for gem materials.</p>
2. Select, pre-shape and dop selected gem piece	<p>2.1 Piece of gem suitable for faceting is selected.</p> <p>2.2 Piece is pre-shaped using faceting machine or bench grinder to establish crown and pavilion.</p> <p>2.3 Dop stone is selected on work pavilion first.</p>
3. Grind, sand and polish pavilion	<p>3.1 Dopped stone is placed in quill and aligned to create girdle.</p> <p>3.2 Girdle is ground to desired shape on medium to fine lap.</p> <p>3.3 Main facets are ground at main angle on medium to fine lap.</p> <p>3.4 Girdle break facets are ground at girdle break angle on fine lap.</p> <p>3.5 Culet facets are ground at culet angle on fine or pre-polish lap.</p> <p>3.6 All pavilion facets including girdle are fine lapped, pre-polished and polished.</p>
4. Transfer stone	<p>4.1 Stone is transferred to suitable dop.</p> <p>4.2 Crown dop is removed and new dop and stone are placed in faceting quill.</p>
5. Grind, pre-polish and polish crown	<p>5.1 Girdle facet is placed on lap at 90°, index setting 64 or 96 and lock quill.</p> <p>5.2 Girdle break facets are ground at break angle establishing girdle thickness, on a medium to fine lap.</p>

	<p>5.3 Main facets are ground at main angle on fine lap.</p> <p>5.4 Table facet on fine lap, to 40% of total width of gem stone is cut.</p> <p>5.5 All crown facets are pre-polished.</p> <p>5.6 Star facets are ground using pre-polish lap.</p> <p>5.7 All facets are polished.</p> <p>5.8 Stone is removed from dop and cleaned</p>
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Variable	Range
Faceting machines	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Facetron (USA) • Gemmasta (Aus) • Graves (USA) • jamb peg • Platform • Poly-Metrics (USA) • Post • Raytech (USA) • Ultra Tec (USA).
Machine components	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • angle venire (protractor) • coarse and fine height adjuster • coolant tank • forward and reverse switch • hand piece (quill) • index wheel • master lap • radial venire (cheater) • sliding post • Variable speed control.
Laps'	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • coarse #80, #100, #120, #180 • fine #800, #1000, #1200 • medium #220, #320, #360, #400, #600 • polish #14000, #50000, #10000 • Pre-polish #2400, #3000, #8000.
Maintenance checklist	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • check electrics regularly for faults and water seepage • cover machine when not in use • keep all laps separate from each other • keep whole machine clean • oil and clean moving parts • read manufacturer manual and keep near machine.
Gem suitable for	May include but not limited to:

faceting	<ul style="list-style-type: none"> • Garnet • Periods • Aquamarine • Different Quartz varieties • Tourmaline • Topaz and • Any..other transparent gem
Angles	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • critical angle $43\frac{1}{2}^{\circ}$ • crown main 43° • culet angle 44° • girdle breaks, main angle plus 6° to 15° • pavilion main 45° • star facets, main angle minus 15° • Table facet 0°.

Evidence Guide

Critical aspects of Competence	<p>Demonstrate knowledge and skills to:</p> <ul style="list-style-type: none"> • select gem pieces suitable for faceting • use faceting equipment to produce and polish a faceted gem that conforms to industry standards • Follow all OHS requirements for machinery and equipment procedures.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • suitability of gem pieces for faceting • equipment and consumables required for gem faceting process • industry standards for faceting
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • critical thinking and analytical skills to select appropriate opal pieces • problem-solving skills to deal with contingencies and OHS issues • numeracy skills to use numerical features of machinery • technical skills to: • facet, grind and polish stones and maintain equipment • set up equipment to manufacturer specifications.
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level III	
Unit Title	Complete Pre-cutting Processes for Solid Opals
Unit Code	MIN LAP3 02 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to determine market needs for solid opals as a basis for decision making, to plan the stones to be cut and complete the pre-cutting processes. It includes documenting and recording all aspects of the procurement and cutting process. This unit requires the application of research skills to determine market preferences for buying cut and polished opal so that decisions can be made on how to cut the opal to gain the best yield and show of colour. It also covers the ability to carry out all the pre-cutting planning, cleaning and pre-forming of the gemstone while working safely with materials and equipment.

Elements	Performance Criteria
1. Survey market requirements as a basis for making a decision on opal cutting strategy	<p>1.1 Current client cut and polished opal-buying preferences are established in the retail and wholesale markets.</p> <p>1.2 The internet buying preferences are determined for cut and polished opal.</p> <p>1.3 Client buying preferences are documented for cut and polished opal.</p>
2. Weigh opal and record information	<p>2.1 Opal is weighed before cleaning as a basis for determining yield.</p> <p>2.2 Relevant information is recorded.</p>
3. Clean and orient opal to determine yields and shape	<p>3.1 An assessment of the stone is done and consulted with supervisor, colleagues, client or other appropriate persons.</p> <p>3.2 Rub down to expose the colour face using appropriate equipment.</p> <p>3.3 Best orientation is determined for gemstone.</p> <p>3.4 The top and bottom of the stone are established.</p> <p>3.5 Unwanted material is removed.</p> <p>3.6 Internal flaws are checked for with powerful light source.</p> <p>3.7 Stone is cut to maximise value, taking yield and colour play into consideration.</p>
4. Process opal to pre-form state	<p>4.1 Unwanted material is removed from the planned gemstone using appropriate equipment.</p> <p>4.2 The desired shape is ground.</p> <p>4.3 Internal flaws are checked for and corrected if necessary.</p>

	4.4 General OHS principles and safe operating procedures are followed when using tools, equipment and materials
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Variable	Range
Determining opal-buying preferences	May include but not limited to: <ul style="list-style-type: none"> • accessing internet auction sites • accessing internet opal-specific sites • making contact with opal dealers • making contact with opal cutters • phoning jewellery wholesalers and other jewellers • talking with local jewellery store owners • Targeting specialist opal stores.
Relevant information	May include but not limited to: <ul style="list-style-type: none"> • date of purchase • description of stone • description of area where mined • mining lease number • number of classes • purchase price • vendor • weight.
Appropriate equipment	<ul style="list-style-type: none"> • May include but not limited to: • cleaning equipment • diamond grinder • diamond saw • free-hand saw • silicon carbide grinder • slab saw • trim saw.
Unwanted material	<ul style="list-style-type: none"> • cracked material • iron stone • materials with inclusions or stains • matrix • poor colour • potch • sandstone.
General OHS principles and safe operating procedures	May include but not limited to: <ul style="list-style-type: none"> • complying with safe operating procedures for each machine • good housekeeping, in particular avoiding contaminants • using Personal Protective Equipment (PPE) where required.

Evidence Guide			
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • apply knowledge of current retail, wholesale and internet 		
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	<p>buying trends</p> <ul style="list-style-type: none"> • make decisions on what the final product should be and how to cut the stone to achieve the desired outcome, maximising the yield and colour play from each stone • Safely complete cleaning, shaping and pre-forming.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • characteristics of opal gemstone structure • importance of achieving yield when cutting a gemstone • market trends and industry requirements for opal products • safety issues associated with opal-cutting machinery
Underpinning Skills	<p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • communication skills to: • document buying preferences and technical data • consult with others about opal assessments • critical thinking and analytical skills to assess stones • literacy skills to interpret information about buying preferences • problem-solving skills to identify flaws and maximise yields • numeracy skills to make basic calculations and use numerical features of machinery • Technology skills to source information from the internet and use cutting machinery.
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level III	
Unit Title	Cut and Polish Solid Opals
Unit Code	MIN LAP3 03 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to cut and polish a solid opal to make a finished cabochon or other shape from a pre-formed stone.

Elements	Performance Criteria
1. Prepare to cut an opal solid	<p>1.1 Consumables required for cutting an opal solid are identified and obtained.</p> <p>1.2 Tools and equipment to be used are selected.</p> <p>1.3 Jewellers' cutting angle requirements are determined.</p> <p>1.4 Pre-form is doped on appropriate dop stick using wax or adhesive as appropriate.</p> <p>1.5 General OHS principles and safe operating procedures are followed when using tools, equipment, machinery and consumables for opal cutting.</p>
2. Cut and polish top surface of opal	<p>2.1 Shape and dome ensuring continuity of contour and maintaining jewellers' setting angles are fine ground.</p> <p>2.2 Sand opal is polished to remove grinding marks using appropriate sanding papers or diamond wheel.</p> <p>2.3 Top surface of opal is polished with polishing compound to a high lustre.</p>
3. Cut and polish back surface of opal	<p>3.1 Stone is removed from dop, turned over and replaced on dop checking alignment.</p> <p>3.2 The back of the stone is ground to jewellers' standards maintaining continuity of form and alignment.</p> <p>3.3 Sand is polished to remove grinding marks if required.</p> <p>3.4 The stone is removed from the dop and the stone cleaned.</p>
4. Treat opal specimen	<p>4.1 Opal specimen is selected for treatment and checked to ensure it will benefit from treatment.</p> <p>4.2 Selected area is ground, sanded and polished.</p> <p>4.3 The selected area is treated.</p> <p>4.4 Opal specimen is cleaned or neutralised as required.</p>

Variable	Range
Consumables	May include but not limited to: <ul style="list-style-type: none"> • cerium or tin oxide • cleaning spirit

	<ul style="list-style-type: none"> • diamond or silicon carbide wheels #220 or #360 • diamond polishing compound #2400 to #100000 • diamond polishing wheels #3000 to #50000 • diamond sanding wheels #280 to #1200 • felt or leather buffs • silicon carbide sanding paper #180 to #600 • Wax or adhesives for doping.
Equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • appropriate ventilation • grinding machinery • Personal Protective Equipment (PPE) • polishing machinery • sanding machinery • Saws.
Jewellers' cutting angle requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • 10° to 12° side angle (from setting edge to start of dome) • 35° to 45° back setting edge (standard solid) • all sharp edges or acute angles to be slightly rounded • flat or domed back • high overall polish and free of defects • proportions of low, medium and high domes to be maintained • sanded or polished back • setting edge to be straight and parallel to back • thickness of stone not to exceed 2/3 of width (standard solid) • Tolerance for standard millimetre sizes, 0.2mil. + or – • When leaving potch or boulder on back of stone, maintain proportions in relation to stone size, i.e. approx. 2/3 of width.
General OHS principles and safe operating procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • complying with the safe operating procedures for each machine or process • Good housekeeping using PPE where required.
Shape and dome	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • a variety of other shapes • cabochon • dome – high, medium and low • free form • rectangles • Shapes.
Treatment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • sugar and acid treatment • Sugar and heat treatment.

Evidence Guide			
Critical aspects of	Demonstrate knowledge and skills to:		
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Competence	<ul style="list-style-type: none"> • apply knowledge of the processes for cutting and polishing opals in a range of shapes • Achieve a high quality finish that satisfies the requirements of the jewellery industry.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • characteristics of opal gemstone structure • processes and consumables needed for cutting and polishing opals • safety issues associated with opal cutting and polishing machinery
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • planning and organising skills to plan work logically • problem-solving skills to identify and address common cutting and polishing problems • numeracy skills to use numerical features of machinery • Technical skills to cut and polish opals using correct technique.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level III	
Unit Title	Complete Pre-cutting Processes for Opal Doublets and Triplets
Unit Code	MIN LAP3 04 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to select and prepare opal and backing materials for cutting as doublets or triplets and completes all pre-cutting processes.

Elements	Performance Criteria
1. Select opal for cutting as an opal doublet or triplet	<p>1.1 Suitable materials are selected for cutting as a doublet or triplet based on market requirements and characteristics of the stone.</p> <p>1.2 Best play of colour is determined and marked at that side.</p> <p>1.3 Flaws are checked for with powerful light source and corrected if necessary.</p> <p>1.4 General OHS principles and safe operating procedures are followed when using machinery for opal cutting</p>
2. Flatten opal and base	<p>2.1 Opal is flattened on marked side until surface is free of potch and impurities and is completely down to the colour bar using appropriate equipment.</p> <p>2.2 Backing materials are selected and flattened.</p> <p>2.3 Opal and base are lapped until flat satin finish is obtained.</p> <p>2.4 Opal and base are cleaned and dried.</p>
3. Cement components together	<p>3.1 Flattened surface is blackened with appropriate blackening agent.</p> <p>3.2 Adhesive is mixed in line with manufacturers' instructions.</p> <p>3.3 Ensure stone is cemented with the best colour face down.</p> <p>3.4 Flattened surfaces are cemented together eliminating excess adhesive and air bubbles.</p> <p>3.5 Adhesive is allowed to harden following manufacturers' instructions.</p>
4. Pre-form opal doublet	<p>4.1 Stone is ground to expose join between opal and backing.</p> <p>4.2 Stone is ground to expose best colour.</p> <p>4.3 Rough shape is ground.</p>
5. Convert doublet to triplet	<p>5.1 A triplet working is manufactured with a very thin opal layer.</p> <p>5.2 The colour surface of the opal is lapped until a thin layer of opal remains on the backing.</p>

	<p>5.3 Stone is cleaned and dried.</p> <p>5.4 Manufactured triplet top or preferred alternative is cemented to the opal surface, eliminating excess adhesive and air bubbles after curing, grind the stone to expose both joins.</p>
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Variable	Range
Suitable materials	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • multiple bars of colour with potch between • off-cuts from solid production • opal from unsuitable boulder iron stone • opal prone to crack (triplet only) • opalised shell skins • thin bar of colour in potch • thin seam opal • Weak colour on a clear base (jelly opal).
General OHS principles and safe operating procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • complying with the safe operating procedures for each machine • good housekeeping • Using Personal Protective Equipment (PPE) where required.
Appropriate equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • diamond grinder • diamond saw • free-hand saw • silicon carbide grinder • slab saw • Trim saw.
Backing materials	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • black jade • black potch • boulder iron stone • clear or transparent potch • dark grey potch • glass (triplet only) • obsidian (black) • vitrolite (triplet only).
Blacking agent	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • black epoxy additives • black permanent markers • nigrosine.
Adhesive	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Loctite UV 358 or 363 (triplet top to opal) • UHU Plus 24hr (opal to backing) • other glues, such as:

	<ul style="list-style-type: none"> • UHU Quickset • Megapoxy 69 • Epoxy 330 • Tenax+ super glue • Bond 527 • Tite On.
Triplet top	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • clear quartz • commercial standards size triplet tops • glass, plain or plate • lead crystal glass • Synthetic spinel, corundum and topaz.

Evidence Guide	
Critical aspects of Competence	<p>Demonstrate knowledge and skills in:</p> <ul style="list-style-type: none"> • select appropriate materials for making opal doublets and triplets • complete pre-cutting processes using safe work practices
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • characteristics of opal gemstone structure • processes, materials and consumables needed for making doublets and triplets • safety issues associated with opal cutting and polishing machinery
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • planning and organising skills to select and prepare opal backing materials for cutting • problem-solving skills to identify and address common problems associated with pre-cutting processes • numeracy skills to use numerical features of machinery • technical skills to: • complete pre-cutting processes for opal doublets and triplets using correct technique and equipment • work safely with opal-cutting equipment and materials
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<ul style="list-style-type: none"> • Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level III	
Unit Title	Cut and Polish Opal Doublets and Triplets
Unit Code	<u>MIN LAP3 05 0114</u>
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to cut and polish both opal doublets and triplets.

Elements	Performance Criteria
1. Prepare to cut an opal doublet or triplet	<p>1.1 Consumables required for cutting and polishing an opal doublet or triplet are identified and obtained.</p> <p>1.2 Tools and equipment to be used are selected.</p> <p>1.3 Jewellers' cutting angle requirements are determined.</p> <p>1.4 Pre-form is doped on appropriate dop stick using wax or adhesive.</p>
2. Cut and polish an opal doublet or triplet	<p>2.1 Relevant shape is ground using colour pattern and played as a guide.</p> <p>2.2 Shape incorporating jewellers' side angles, including backing into shape are ground.</p> <p>2.3 Dome the top of doublet, leaving a minimum of 1mm above join at side angle.</p> <p>2.4 Top and sides of opal doublet are sanded and polished.</p> <p>2.5 Stone is turned over and re-doped.</p> <p>2.6 Backing is ground, sanded and polished at jewellers' angles.</p> <p>2.7 Stone is removed from dop and cleaned.</p>
3. Cut and polish an opal triplet commercial top	<p>3.1 Dop stone on top of triplet top.</p> <p>3.2 Backing thickness is ground down to approximately 1mm.</p> <p>3.3 Edge of backing is ground at approximately 30° until the edge of the triplet top is met.</p> <p>3.4 Backing is sanded and polished.</p> <p>3.5 Stone is removed from dop and clean.</p>
4. Cut and polish an opal triplet non-commercial top	<p>4.1 Dop pre-form with glass/quartz on top.</p> <p>4.2 Stone is shaped like high domed doublet on grinder.</p> <p>4.3 Opal colour is transformed optically into whole of dome.</p> <p>4.4 Top and sides of stone are sanded and polished.</p> <p>4.5 Stone is turned over and re-doped on top surface.</p> <p>4.6 Backing thickness is ground to 1mm.</p>

	<p>4.7 Setting edge angle is ground at 30°, until 1mm into top, under- cutting backing.</p> <p>4.8 Bottom and setting edge is sanded and polished and any chipping that may occur around edge of top is removed.</p> <p>4.9 Stone is removed from dop and cleaned.</p>
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Variable	Range
Consumables	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • cerium or tin oxide • cleaning spirit • diamond or silicon carbide wheels #220 or #360 • diamond polishing compound #2400 to #100000 • diamond polishing wheels #3000 to #50000 • diamond sanding wheels #280 to #1200 • felt or leather buffs • Silicon carbide sanding paper #180 to #600.
Equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • grinding machinery • PPE • polishing machinery • sanding machinery • Saw.
Jewellers' cutting angle requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • 10° to 12° side angle • all sharp edges or acute angles be slightly rounded • flat or domed back • high overall polish and free of defects • sanded or polished back • setting edge to be straight and parallel to back • Tolerance for standard millimetre sizes, 0.2mil. + Or –.
Wax or adhesives for doping	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • any 5 minute adhesive, using aluminium dop sticks • wood glue • hot wax sticks (hot glue gun) • super glues • vacuum dopping • wax (medium to low melting).
Shape	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • a variety of other shapes • cabochon • dome – high, medium and low • free form • Rectangles.
Triplet top materials	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • clear quartz • commercial standards size triplet tops

	<ul style="list-style-type: none"> • glass, plain or plate • lead crystal glass • material of the triplet top should be disclosed • Synthetic spinal, corundum and topaz.
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Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills in: <ul style="list-style-type: none"> • cut and polish doublets and triplets from a range of types of opal using appropriate consumables and equipment and using commercial and non-commercial triplet tops to accepted industry standards • Safely complete the cutting, polishing and cleaning processes, using equipment and consumables safely.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • characteristics of opal that make it suitable for use as a doublet or triplet • general principles of OHS for working in an opal-cutting workshop, including: <ul style="list-style-type: none"> • complying with the safe operating procedures for each machine and materials • good housekeeping • using Personal Protective Equipment (PPE) where required • materials used in doublets and triplets • Processes to be used in making a doublet or triplet.
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • planning and organising skills to prepare materials for cutting and polishing • problem-solving skills to identify and address common cutting and polishing problems • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • cut and polish opals using correct technique • work safely with opal-cutting equipment and materials
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level III	
Unit Title	Carve Gem Materials
Unit Code	MIN LAP3 06 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to carve Cameos, Intaglios, Ornamental or Utilitarian Items from gem materials, including all the processes from the selection of the piece of gem to the completed polished carving.

Elements	Performance Criteria
1. Select the stone and clarify the required outcome	<p>1.1 Available pieces of rough gem are reviewed to determine the suitability or necessity for carving.</p> <p>1.2 The potential of pieces of gem is assessed for carving depending on the shape, size, position of the colour, and other characteristics of the stone.</p> <p>1.3 The stone is rubbed removing foreign materials and eliminating faults.</p> <p>1.4 The potential is discussed for enhancing stone with colleagues and client.</p> <p>1.5 The approach to be taken is determined to achieve the potential of the stone and the value of the finished product maximised.</p>
2. Select tools, equipment and materials	<p>2.1 Carving tools and equipment needed are selected to achieve the desired result.</p> <p>2.2 Consumables are selected for sanding and polishing the carving.</p> <p>2.3 OHS issues are determined and complied with OHS procedures when using the equipment and consumables.</p>
3. Carve Gem	<p>3.1 The stone is cleaned removing foreign materials and eliminating faults.</p> <p>3.2 Stone is ground to desired shape using high speed fine grit burr and accommodating existing colour and patterns.</p> <p>3.3 Carving is sanded with suitable sanding mediums, from coarse to extra fine.</p>
4. Polish the carving	<p>4.1 Entire carving is polished with polishing compound.</p> <p>4.2 Magnification is used to check the finished carving for faults and if necessary rectify faults.</p>
5. Ensure that industry standards are satisfied	<p>5.1 The carving is checked to ensure that industry practice and expectations are satisfied.</p> <p>5.2 Any faults or defects are corrected if required.</p>

Variable	Range		
Carving tools	May include but not limited to: <ul style="list-style-type: none"> • assorted mandrels • coarse, medium, fine and extra fine wheels • diamond grinding burrs of assorted shapes • diamond polishing wheels of assorted shapes • diamond sanding wheels of assorted shapes • felt polishing buffs • sanding discs, assorted grit sizes and diameters • silicon carbide grinding burrs of assorted shapes • supporting equipment: • drip feed watering system • dust extraction system • Wooden polishing buffs. 		
Carving equipment	May include but not limited to: <ul style="list-style-type: none"> • air power tools • centre point carvers • flexible drive • hobby carvers • micro motor • Personal Protective Equipment (PPE). 		
OHS issues	May include but not limited to: <ul style="list-style-type: none"> • contamination • eye protection • guarding • keeping a clean work area • minimising dust inhalation • maintaining equipment • Unattended running machinery. 		
Sanding mediums	May include but not limited to: <ul style="list-style-type: none"> • coarse, medium, fine and extra fine wheels of assorted shapes • diamond powders up to #1200 on felt/wooden wheels • pumice powders on felt wheels • sandpaper wheels and discs up to #1200, assorted sizes • Silicon carbide powders up to #1200 on felt/wooden wheels. 		
Polishing compounds	May include but not limited to: <ul style="list-style-type: none"> • tin oxide on felt, leather or wooden wheels or discs • diamond compounds from #1200 to #100,000 		
Industry practice and expectations	May include but not limited to: <ul style="list-style-type: none"> • no sharp or protruding areas • when shaping, keep the setting into jewellery in mind • very high polish • no grinding marks or sanding marks on surface • no cracks or obvious inclusions that should have been removed with initial grinding 		
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	<ul style="list-style-type: none"> • avoiding making the carving too large • Considering how strength of colour may affect the need for detail.
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Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • select gem pieces suitable for carving • carve the opal using opal carving equipment to industry standard • Polish the carving according to industry standards.
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • characteristics of gemstone structure • suitability of gem pieces for carving • opal carving process, including required equipment and consumables • safety issues associated with gem cutting and polishing machinery • industry standards for carving
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • communication skills to discuss potential for enhancing stone with colleagues and clients • critical thinking and analytical skills to assess the potential of pieces and choose the best approach • planning and organising skills to select appropriate tools, equipment and materials • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • choose appropriate stone for cutting • cut, sand and polish opals using correct technique • Correct faults and defects.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level III	
Unit Title	Monitor Implementation of Work Plan/Activities
Unit Code	MIN LAP3 07 0114
Unit Descriptor	This unit covers competence required to oversee and monitor the quality of work operations within an enterprise. This unit may be carried out by team leaders or supervisors.

Elements	Performance Criteria
1. Monitor and improve workplace operations	<p>1.1 Efficiency and service levels are monitored on an ongoing basis.</p> <p>1.2 Operations in the workplace support overall enterprise goals and quality assurance initiatives.</p> <p>1.3 Quality problems and issues are promptly identified and adjustments are made accordingly.</p> <p>1.4 Procedures and systems are changed in consultation with colleagues to improve efficiency and effectiveness.</p> <p>1.5 Colleagues are consulted about ways to improve efficiency and service levels.</p>
2. Plan and organise workflow	<p>2.1 Current workload of colleagues is accurately assessed.</p> <p>2.2 Work is scheduled in a manner which enhances efficiency and customer service quality.</p> <p>2.3 Work is delegated to appropriate people in accordance with principles of delegation.</p> <p>2.4 Workflow is assessed against agreed objectives and timelines and colleagues are assisted in prioritisation of workload.</p> <p>2.5 Input is provided to appropriate management regarding staffing needs.</p>
3. Maintain workplace records	<p>3.1 Workplace records are accurately completed and submitted within required timeframes.</p> <p>3.2 Where appropriate completion of records is delegated and monitored prior to submission.</p>
4. Solve problems and make decisions	<p>4.1 Workplace problems are promptly identified and considered from an operational and customer service perspective.</p> <p>4.2 Short term action is initiated to resolve the immediate problem where appropriate.</p> <p>4.3 Problems are analysed for any long term impact and potential solutions are assessed and actioned in consultation with relevant colleagues.</p>

	<p>4.4 Where problem is raised by a team member, they are encouraged to participate in solving the problem.</p> <p>4.5 Follow up action is taken to monitor the effectiveness of solutions in the workplace.</p>
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Variables	Range
Problems	May include but not limited to: <ul style="list-style-type: none"> • difficult customer service situations • equipment breakdown/technical failure • delays and time difficulties • competence
Workplace records	May include but is not limited to: <ul style="list-style-type: none"> • staff records and regular performance reports

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> • ability to effectively monitor and respond to a range of common operational and service issues in the workplace • understanding of the role of staff involved in workplace monitoring • knowledge of quality assurance, principles of workflow planning, delegation and problem solving
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • roles and responsibilities in monitoring work operations • overview of leadership and management responsibilities • principles of work planning and principles of delegation • typical work organization methods appropriate to the sector • quality assurance principles and time management • problem solving and decision making processes • industrial and/or legislative issues which affect short term work organization as appropriate to industry sector
Underpinning Skills	Demonstrate skills to: <ul style="list-style-type: none"> • monitor and improve workplace operations • plan and organize workflow • maintain workplace records
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level III	
Unit Title	Apply Quality Control
Unit Code	MIN LAP3 08 0114
Unit Descriptor	This unit covers the knowledge, attitudes and skills required in applying quality control in the workplace.

Elements	Performance Criteria
1. Implement quality standards	<p>1.1 Agreed quality standard and procedures are acquired and confirmed.</p> <p>1.2 Standard procedures are introduced to organizational staff/personnel.</p> <p>1.3 Quality standard and procedures documents are provided to employees in accordance with the organization policy.</p> <p>1.4 Standard procedures are revised / updated when necessary.</p>
2. Assess quality of service delivered	<p>2.1 Services delivered are quality checked against organization quality standards and specifications.</p> <p>2.2 Service delivered are evaluated using the appropriate evaluation quality parameters and in accordance with organization standards.</p> <p>2.3 Causes of any identified faults are identified and corrective actions are taken in accordance with organization policies and procedures.</p>
3. Record information	<p>3.1 Basic information on the quality performance is recorded in accordance with organization procedures.</p> <p>3.2 Records of work quality are maintained according to the requirements of the organization.</p>
4. Study causes of quality deviations	<p>4.1 Causes of deviations from final outputs or services are investigated and reported in accordance with organization procedures.</p> <p>4.2 Suitable preventive action is recommended based on organization quality standards and identified causes of deviation from specified quality standards of final service or output.</p>
5. Complete documentation	<p>5.1 Information on quality and other indicators of service performance is recorded.</p> <p>5.2 All service processes and outcomes are recorded.</p>

Variable	Range
Quality check	May include but not limited to:

	<ul style="list-style-type: none"> • Check against design / specifications • Visual inspection and Physical inspection
Quality standards	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Materials • Components • Process • Procedures
Quality parameters	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Standard Design / Specifications • Material Specification

Evidence Guide

Critical Aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Check completed work continuously against organization standard • Identify and isolate faulty or poor service • Check service delivered against organization standards • Identify and apply corrective actions on the causes of identified faults or error • Record basic information regarding quality performance • Investigate causes of deviations of services against standard • Recommend suitable preventive actions
Underpinning Knowledge	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Relevant quality standards, policies and procedures • Characteristics of services • Safety environment aspects of service processes • Evaluation techniques and quality checking procedures • Workplace procedures and reporting procedures
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • interpret work instructions, specifications and standards appropriate to the required work or service • carry out relevant performance evaluation • maintain accurate work records • meet work specifications and requirements • communicate effectively within defined workplace procedures
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level III	
Unit Title	Lead Workplace Communication
Unit Code	<u>MIN LAP3 09 0114</u>
Unit Descriptor	This unit covers the knowledge, attitudes and skills needed to lead in the dissemination and discussion of information and issues in the workplace.

Elements	Performance Criteria
1. Communicate information about workplace processes	1.1 Appropriate communication method is selected. 1.2 Multiple operations involving several topics areas are communicated accordingly. 1.3 Questions are used to gain extra information. 1.4 Correct sources of information are identified. 1.5 Information is selected and organized correctly. 1.6 Verbal and written reporting is undertaken when required. 1.7 Communication skills are maintained in all situations.
2. Lead workplace discussion	2.1 Response to workplace issues is sought. 2.2 Response to workplace issues are provided immediately. 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety. 2.4 Goals/objectives and action plan undertaken in the workplace are communicated.
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise. 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication. 3.3 Dialogue is initiated with appropriate staff/personnel. 3.4 Communication problems and issues are raised as they arise.

Variable	Range
Methods of communication	May include but not limited to: <ul style="list-style-type: none"> • Non-verbal gestures • Verbal • Face to face • Two-way radio • Speaking to groups • Using telephone • Written

	<ul style="list-style-type: none"> • Using Internet • Cell phone
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Evidence Guide

Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Dealt with a range of communication/information at one time • Made constructive contributions in workplace issues • Sought workplace issues effectively • Responded to workplace issues promptly • Presented information clearly and effectively written form • Used appropriate sources of information • Asked appropriate questions • Provided accurate information
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Organization requirements for written and electronic communication methods • Effective verbal communication methods
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • Organize information • Understand and convey intended meaning • Participate in variety of workplace discussions • Comply with organization requirements for the use of written and electronic communication methods
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level III	
Unit Title	Lead Small Teams
Unit Code	MIN LAP3 10 0114
Unit Descriptor	This unit covers the skills, knowledge and attitudes required to determine individual and team development needs and facilitate the development of the work group.

Elements	Performance Criteria
1. Provide team leadership	<p>1.1 Learning and development needs are systematically identified and implemented in line with organizational requirements.</p> <p>1.2 Learning plan to meet individual and group training and developmental needs is collaboratively developed and implemented.</p> <p>1.3 Individuals are encouraged to self-evaluate performance and identify areas for improvement.</p> <p>1.4 Feedback on performance of team members is collected from relevant sources and compared with established team learning process.</p>
2. Foster individual and organizational growth	<p>2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of Competence standards.</p> <p>2.2 Learning delivery methods are appropriate to the learning goals, the learning style of participants and availability of equipment and resources.</p> <p>2.3 Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies.</p> <p>2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.</p>
3. Monitor and evaluate workplace learning	<p>3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements.</p> <p>3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support.</p> <p>3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning.</p> <p>3.4 Records and reports of Competence are maintained within organizational requirement.</p>

4. Develop team commitment and cooperation	<p>4.1 Open communication processes to obtain and share information is used by team.</p> <p>4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities.</p> <p>4.3 Mutual concern and camaraderie are developed in the team.</p>
5. Facilitate accomplishment of organizational goals	<p>5.1 Team members actively participated in team activities and communication processes.</p> <p>5.2 Team's members developed individual and joint responsibility for their actions.</p> <p>5.3 Collaborative efforts are sustained to attain organizational goals.</p>

Variable	Range
Learning and development needs	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Coaching, mentoring and/or supervision • Formal/informal learning program • Internal/external training provision • Work experience/exchange/opportunities • Personal study • Career planning/development • Performance appraisals • Workplace skills assessment • Recognition of prior learning
Organizational requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Quality assurance and/or procedures manuals • Goals, objectives, plans, systems and processes • Legal and organizational policy/guidelines and requirements • Safety policies, procedures and programs • Confidentiality and security requirements • Business and performance plans • Ethical standards • Quality and continuous improvement processes and standards
Feedback on performance	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Formal/informal performance appraisals • Obtaining feedback from supervisors and colleagues • Obtaining feedback from clients • Personal and reflective behavior strategies • Routine and organizational methods for monitoring service delivery
Learning delivery methods	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • On the job coaching or mentoring • Problem solving • Presentation/demonstration • Formal course participation • Work experience and Involvement in professional networks

	<ul style="list-style-type: none"> • Conference/seminar attendance and induction
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Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • identified and implemented learning opportunities for others • gave and received feedback constructively • facilitated participation of individuals in the work of the team • negotiated learning plans to improve the effectiveness of learning • prepared learning plans to match skill needs • accessed and designated learning opportunities
Underpinning Knowledge and Attitude	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • coaching and mentoring principles • understanding how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective • understanding how to facilitate team development and improvement • understanding methods and techniques for eliciting and interpreting feedback • understanding methods for identifying and prioritizing personal development opportunities and options • knowledge of career paths and competence standards in the industry
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • read and understand a variety of texts, prepare general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management • receive feedback and report, maintain effective relationships and conflict management • organize required resources and equipment to meet learning needs • provide support to colleagues • organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitation skills to conduct small group training sessions • relate to people from a range of social, cultural, physical and mental backgrounds
Resource Implications	Access to relevant workplace or appropriately simulated environment where assessment can take place
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written exam • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the workplace or in a simulated workplace setting

Occupational Standard: Lapidary Level III	
Unit Title	Improve Business Practice
Unit Code	MINGCP3 11 0114
Unit Descriptor	This unit covers the skills, knowledge and attitudes required in promoting, improving and growing business operations.

Elements	Performance Criteria
1. Diagnose the business	1.1 Data required for diagnosis is determined and acquired. 1.2 Competitive advantage of the business is determined from the data. 1.3 SWOT analysis of the data is undertaken.
2. Benchmark the business	2.1 Sources of relevant benchmarking data are identified. 2.2 Key indicators for benchmarking are selected in consultation with key stakeholders. 2.3 Like indicators of own practice are compared with benchmark indicators. 2.4 Areas for improvement are identified.
3. Develop plans to improve business performance	3.1 A consolidated list of required improvements is developed. 3.2 Cost-benefit ratios for required improvements are determined. 3.3 Work flow changes resulting from proposed improvements are determined. 3.4 Proposed improvements are ranked according to agreed criteria. 3.5 An action plan is developed and agreed to implement the top ranked improvements. 3.6 Organizational structures are checked to ensure they are suitable.
4. Develop marketing and promotional plans	4.1 The practice vision statement is reviewed. 4.2 Practice objectives are developed/ reviewed. 4.3 Target markets are identified/ refined. 4.4 Market research data is obtained. 4.5 Competitor analysis is obtained. 4.6 Market position is developed/ reviewed. 4.7 Practice brand is developed. 4.8 Benefits of practice/practice products/services are identified.

	4.9 Promotion tools are selected/ developed.
5. Develop business growth plans	<p>5.1 Plans are developed to increase yield per existing client.</p> <p>5.2 Plans are developed to add new clients.</p> <p>5.3 Proposed plans are ranked according to agreed criteria.</p> <p>5.4 An action plan is developed and agreed to implement the top ranked plans.</p> <p>5.5 Practice work practices are reviewed to ensure they support growth plans.</p>
6. Implement and monitor plans	<p>6.1 Implementation plan is developed in consultation with all relevant stakeholders.</p> <p>6.2 Indicators of success of the plan are agreed.</p> <p>6.3 Implementation is monitored against agreed indicators.</p> <p>6.4 Implementation is adjusted as required.</p>

Variable	Range
Data required includes:	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • organization capability • appropriate business structure • level of client service which can be provided • internal policies, procedures and practices • staff levels, capabilities and structure • market, market definition • market changes/market segmentation • market consolidation/fragmentation • revenue • level of commercial activity • expected revenue levels, short and long term • revenue growth rate • break even data • pricing policy • revenue assumptions • business environment • economic conditions • social factors • demographic factors • technological impacts • political/legislative/regulative impacts • competitors, competitor pricing and response to pricing • competitor marketing/branding • competitor products
Competitive advantage	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • services/products

	<ul style="list-style-type: none"> • fees • location • timeframe
SWOT analysis	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • internal strengths such as staff capability, recognized quality • internal weaknesses such as poor morale, under-capitalization, poor technology • external opportunities such as changing market and economic conditions • external threats such as industry fee structures, strategic alliances, competitor marketing
Key indicators	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • salary cost and staffing • personnel productivity (particularly of principals) • profitability • fee structure • client base • size staff/principal • overhead/overhead control
Organizational structures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Legal structure (partnership, Limited Liability Company, etc.) • organizational structure/hierarchy • reward schemes
Objectives should be 'SMART'	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • S: Specific • M: Measurable • A: Achievable • R: Realistic • T: Time defined
Market research data	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • data about existing clients • data about possible new clients • data from internal sources • data from external sources such as: <ul style="list-style-type: none"> ➤ trade associations/journals ➤ Yellow Pages small business surveys ➤ libraries ➤ Internet ➤ Chamber of Commerce ➤ client surveys ➤ industry reports ➤ secondary market research • primary market research such as: <ul style="list-style-type: none"> ➤ telephone surveys ➤ personal interviews

	➤ mail surveys		
Competitor analysis	May include but not limited to: <ul style="list-style-type: none"> • competitor offerings • competitor promotion strategies and activities • competitor profile in the market place 		
Market position should include data on:	May include but not limited to: <ul style="list-style-type: none"> • product • the good or service provided • product mix • the core product - what is bought • the tangible product - what is perceived • the augmented product - total package of consumer • features/benefits • product differentiation from competitive products • new/changed products • Price and pricing strategies (cost plus, supply/demand, ability to pay, etc.) • Pricing objectives (profit, market penetration, etc.) • cost components • market position • distribution strategies • marketing channels • promotion • promotional strategies • target audience • communication • promotion budget 		
Practice brand	May include but not limited to: <ul style="list-style-type: none"> • practice image • practice logo/letter head/signage • phone answering protocol • facility decor • slogans • templates for communication/invoicing • style guide • writing style • AIDA (attention, interest, desire, action) 		
Benefits	May include but not limited to: <ul style="list-style-type: none"> • features as perceived by the client • benefits as perceived by the client 		
Promotion tools	May include but not limited to: <ul style="list-style-type: none"> • networking and referrals • seminars • advertising • press releases • publicity and sponsorship • brochures 		
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	<ul style="list-style-type: none"> • newsletters (print and/or electronic) • websites • direct mail • telemarketing/cold calling
Yield per existing client	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • raising charge out rates/fees • packaging fees • reduce discounts • sell more services to existing clients

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Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • ability to identify the key indicators of business performance • ability to identify the key market data for the business • knowledge of a wide range of available information sources • ability to acquire information not readily available within a business • ability to analyze data and determine areas of improvement • ability to negotiate required improvements to ensure implementation • ability to evaluate systems against practice requirements and form recommendations and/or make recommendations • ability to assess the accuracy and relevance of information
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • data analysis • communication skills • computer skills to manipulate data and present information • negotiation skills • problem solving • planning skills • marketing principles • ability to acquire and interpret relevant data • current product and marketing mix • use of market intelligence • development and implementation strategies of promotion and growth plans
Underpinning Skills	<p>Demonstrates skill in:</p> <ul style="list-style-type: none"> • data analysis and manipulation • ability to acquire and interpret required data, current practice systems and structures and sources of relevant benchmarking data • applying methods of selecting relevant key benchmarking indicators • communication skills • working and consulting with others when developing plans for the business • planning skills, negotiation skills and problem solving

	<ul style="list-style-type: none"> • using computers to manipulate, present and distribute information
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level III	
Unit Title	Prevent and Eliminate MUDA
Unit Code	MIN LAP3 12 0114
Unit Descriptor	This unit of competence covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her their workplace. It covers responsibility for the day-to-day operation of the work and ensures Kaizen elements are continuously improved and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	<p>1.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>1.2 Job specifications are read and interpreted following working manual.</p> <p>1.3 OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>1.4 Appropriate material is selected for work.</p> <p>1.5 Safety equipment and tools are identified and checked for safe and effective operation.</p>
2. Identify MUDA.	<p>2.1 Plan of MUDA identification is prepared and implemented.</p> <p>2.2 Causes and effects of MUDA are discussed.</p> <p>2.3 Tools and techniques are used to draw and analyze current situation of the work place.</p> <p>2.4 Wastes/MUDA are identified and measured based on relevant procedures.</p> <p>2.5 Identified and measured wastes are reported to relevant personnel.</p>
3. Eliminate wastes/MUDA.	<p>3. 1. Plan of MUDA elimination is prepared and implemented.</p> <p>3. 2. Necessary attitude and the ten basic principles for improvement are adopted to eliminate waste/MUDA.</p> <p>3. 3. Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS.</p> <p>3. 4. Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements.</p> <p>3. 5. Improvements gained by elimination of waste/MUDA</p>

	are reported to relevant bodies.
4. Prevent occurrence of wastes/MUDA.	<p>4.1 Plan of MUDA prevention is prepared and implemented.</p> <p>4.2 Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared.</p> <p>4.3 Occurrences of wastes/MUDA are prevented by using visual and auditory control methods.</p> <p>4.4 Waste-free workplace is created using 5W and 1H sheet.</p> <p>4.5 The completion of required operation is done in accordance with standard procedures and practices.</p> <p>4.6 The updating of standard procedures and practices is facilitated.</p> <p>4.7 The capability of the work team that aligns with the requirements of the procedure is ensured.</p>

Variable	Range
OHS requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • dust masks / goggles • glove • working cloth • first aid • safety shoes
Tools and techniques	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Plant Layout • Process flow • Other Analysis tools • Do time study by work element

	<ul style="list-style-type: none"> • Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc. • Focal points to Check and find out existing problems • 5S • Layout improvement • Brainstorming • Andon • U-line • In-lining • Unification • Multi-process handling & Multi-skilled operators • A.B. control (Two point control) • Cell production line • TPM (Total Productive Maintenance) 		
Relevant procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Make waste visible • Be conscious of the waste • Be accountable for the waste. • Measure the waste. 		
The ten basic principles for improvement	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Throw out all of your fixed ideas about how to do things. • Think of how the new method will work- not how it won. • Don't accept excuses. Totally deny the status quo. • Don't seek perfection. A 50 percent implementation rate is fine as long as it's done on the spot. • Correct mistakes the moment they are found. • Don't spend a lot of money on improvements. • Problems give you a chance to use your brain. • Ask "why?" At least five times until you find the ultimate cause. • Ten people's ideas are better than one person's. • Improvement knows no limits. 		
Visual and auditory control methods	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Red Tagging • Sign boards • Outlining • Andons • Kanban, etc. 		
5W and 1H	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Who • What • Where • When • Why 		
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	<ul style="list-style-type: none"> • How
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Evidence Guide	
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Critical Aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • discuss why wastes occur in the workplace • discuss causes and effects of wastes/MUDA in the workplace • analyze the current situation of the workplace by using appropriate tools and techniques • identify, measure, eliminate and prevent occurrence of wastes by using appropriate tools and techniques • use 5W and 1H sheet to prevent
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Targets of customers and manufacturer/service provider • Traditional and kaizen thinking of price setting • Kaizen thinking in relation to targets of manufacturer/service provider and customer • value • The three categories of operations • the 3“MU” • waste/MUDA • wastes occur in the workplace • The 7 types of MUDA • The Benefits of identifying and eliminating waste • Causes and effects of 7 MUDA • Procedures to identify MUDA • Necessary attitude and the ten basic principles for improvement • Procedures to eliminate MUDA • Prevention of wastes • Methods of waste prevention • Definition and purpose of standardization • Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement • Methods of visual and auditory control • TPM concept and its pillars. • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • draw & analyze current situation of the work place • use measurement apparatus (stop watch, tape, etc.) • calculate volume and area • use and follow checklists to identify, measure and eliminate wastes/MUDA

	<ul style="list-style-type: none"> • identify and measure wastes/MUDA in accordance with OHS and procedures • use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure • apply 5W and 1H sheet • update and use standard procedures for completion of required operation • work with others • read and interpret documents • observe situations • solve problems • communicate • gather evidence by using different means • report activities and results using report formats
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

NTQF Level IV

Occupational Standard: Lapidary Level IV	
Unit Title	Identify the Requirements for Establishing Gem-Cutting Workshop
Unit Code	MIN LAP4 01 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to identify the requirements for establishing an gem-cutting workshop.

Elements	Performance Criteria
1. Assess workshop requirements	<p>1.1 What the workshop is to be used for and how many people will be working there are decided.</p> <p>1.2 The consumables, fixtures and fittings needed for a gem-cutting workshop are determined.</p> <p>1.3 Essential and desirable machinery needed for a cutting and polishing workshop are identified.</p> <p>1.4 The OHS issues are assessed for an opal-cutting and polishing workshop and determine control measures required.</p> <p>1.5 The environmental protection requirements and plan compliance are determined.</p> <p>1.6 The specifications are assessed for the building needed for an opal-cutting workshop, including size, electrical fittings, and water and drainage requirements.</p>
2. Identify suppliers of machinery and consumables and establish set-up cost	<p>2.1 Manufacturers and suppliers/agents are identified for new and second-hand lapidary equipment.</p> <p>2.2 Prices and advantages and disadvantages of new and second-hand equipment, and the costs are compared in obtaining machinery and equipment.</p> <p>2.3 Suppliers are listed of consumables and prices compared.</p> <p>2.4 Estimates of the cost of services required to set up the workshop are obtained.</p>
3. Investigate resources needed to set up the workshop	<p>3.1 A draft budget and cash flow are developed for the first year of operation.</p> <p>3.2 Appropriate research techniques are used to investigate sources of finance and repayment schedules.</p>
4. Document the information	<p>4.1 The information gained is recorded.</p> <p>4.2 The information is organised so that it can be used as the basis for making a decision on whether to proceed with the option to set up an opal cutting and polishing business.</p>

Variable	Range		
Fixtures and fittings	May include but not limited to: <ul style="list-style-type: none"> • air conditioning • benches • chairs • chemical cupboards • cupboards • floor coverings • safes • security requirements, such as door and window locks alarms • shelving • telephone • windows and doors. 		
Machinery and equipment	May include but not limited to: <ul style="list-style-type: none"> • bench grinder 6" or 8" • combination units for grind, sand and polish • diamond grinding, sanding and polishing units • drum or belt sanders • dry sanding units • free-hand saws • grinding arbours with belt drive • leather or felt polishing units • multi-blade saws • slab saws • trim saws • ventilation system and filters • Wet sanding units. 		
OHS issues	May include but not limited to: <ul style="list-style-type: none"> • appropriate clothing and footwear • chemicals • cleanliness of work areas • dangers of using electricity and water in the same environment • dust and fumes • ergonomics • fire extinguishers • first aid kit • guarding for machinery • lighting • naked flames • noise • safety glasses • Ventilation. 		
Electrical fittings	May include but not limited to: <ul style="list-style-type: none"> • cabling and machine wiring • exhaust fans and dust extraction 		
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	<ul style="list-style-type: none"> • hardwired control and fuse box • lighting primary and secondary • switches and safety stops • Waterproof power outlets.
Water and drainage requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • hosing to machinery • sludge traps • splash guards • taps • water drainage and disposal • water supply, mains or gravity fed • Water trays.
Manufacturers and suppliers/agents	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Ashworths Pty Ltd • Contempo Lapidary • Covington • Des Liston Lapidary • Diamond Pacific • Embel Lapidary • Gemmasta • Gemtec • Graves • Lapcraft • Raytech • Robilt • Shelleys Lapidary Supplies • T. F. Lapidary • Thompson's Lapidary • Western Lapidary Supplies.
Costs	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • bank charges • currency exchange • duty or excise • freight • GST • initial cost of machine • insurance • ongoing maintenance • postage • Set-up costs.
Services	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • electrician • Plumbing.
Sources of finance	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • banks • credit unions

	<ul style="list-style-type: none"> • partnerships • Private loans.
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Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • various reference materials • internet • lapidary magazines and catalogues
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • gem-cutting workshop requirements • manufacturers and suppliers of gem-cutting equipment • basic cost analysis, business principles and business planning
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • source information from suppliers about costs and equipment requirements • obtain estimates from service providers and financial institutions • document and access information on gem-cutting equipment, manufacturers and the setting up of an gem-cutting workshop • initiative and enterprise skills to: <ul style="list-style-type: none"> • obtain estimates • develop draft budgets and cash flow • investigate sources of finance • planning and organising skills to record information and organise it in a way that can be used as a basis for decision making • problem-solving skills to identify contingencies, such as OHS issues and rectify them • numeracy skills to develop draft budgets, cash flow and price materials • self-management skills to deliver information on time to appropriate persons for review and decision making • basic research skills, including internet searching skills
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Apply Advanced Pre-cutting Processes to Complex Precious Gems
Unit Code	MIN LAP4 02 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to perform the pre-cutting processes for boulder and other special opals. It includes documenting and recording all aspects of the procurement and pre-cutting process.

Elements	Performance Criteria
1. Identify type of opal rough	<p>1.1 Preliminary investigations are undertaken before deciding how to proceed with cutting or carving the opal.</p> <p>1.2 Current market requirements are reviewed and consulted with client to determine his/her preference for how opal could be cut.</p> <p>1.3 The location of the colour within the rough opal is determined based on knowledge of the geological formation of opal, field from which the opal came and past experience.</p> <p>1.4 Possible strategies are discussed for cutting with colleagues and client as required.</p> <p>1.5 Jewellers' requirements are determined for products being considered.</p> <p>1.6 The options are reviewed for cutting and cut is planned to achieve the best result.</p>
2. Block off the stone (boulder opal)	<p>2.1 When working with boulder opal, a series of cuts are used to block off stone to gain more information about position and quality of the opal present in the stone and determine best gem outcomes from that piece of boulder.</p> <p>2.2 Position of opal is identified and waste minimised when making cuts.</p> <p>2.3 Block opal is cracked along fault lines if appropriate.</p>
3. Expose the colour	<p>3.1 Appropriate equipment is used to expose the colour without removing gem material.</p> <p>3.2 The correct grinding wheels and grits are selected for a given piece.</p>
4. Decide on whether to cut and/or carve the opal	<p>4.1 The stone is reviewed, the directionality determined and decided on the final outcome to be achieved.</p> <p>4.2 Unwanted material is removed and the stone prepared for final processing.</p>

	4.3 The way is selected to cut the stone for the best artistic and commercial return.
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Variable	Range
Appropriate equipment	May include but not limited to: <ul style="list-style-type: none"> • Asahi wheel • diamond grinder • diamond sawing • free-hand saw • nova wheel • silicon carbide grinder • slab saw • Trim saw.
Unwanted material	May include but not limited to: <ul style="list-style-type: none"> • cotton and gypsum • cracked material • crockery • iron stone • materials with inclusions or stains • matrix (in black opal as a unwanted inclusion) • poor colour • potch • Sandstone.

Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • make sound decisions about the final outcome to be achieved and complete all pre-cutting and pre-forming processes for boulder, black and especially valuable or difficult opals • geological formation and structure of opal
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • characteristics of opal gemstone structure and formation • importance of achieving yield when cutting a gemstone • market trends • jewellers' and industry requirements • OHS principles and safe operating procedures for cutting machinery, including: <ul style="list-style-type: none"> • appropriate procedures for dealing with emissions • complying with the safe operating procedures for each machine • using Personal Protective Equipment (PPE) where required
Underpinning Skills	Demonstrate skills of: <p>communication skills to discuss cutting strategies with clients and colleagues</p> <ul style="list-style-type: none"> • planning and organising skills to:

	<ul style="list-style-type: none"> ➤ choose appropriate equipment ➤ select the way to cut the stone for best artistic and commercial return • problem-solving skills to deal with complications in the pre-cutting stage as well as OHS or safety issues • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • make sound decisions to achieve best colour and yield • determine the position of the colour in a boulder opal • use appropriate equipment • apply OHS principles and safe operating procedures
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Opal Spheres and Beads
Unit Code	MIN LAP4 03 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to produce opal spheres and beads, including the selection of the rough opal through to the drilling and final polishing.

Elements	Performance Criteria
1. Set up machinery and equipment	<p>1.1 <i>Bead mill, sphere-making equipment and drills</i> are set up to manufacturers' specifications.</p> <p>1.2 The <i>maintenance areas</i> are identified and the required maintenance routine is completed.</p> <p>1.3 Other methods of making spheres and beads are investigated if commercial equipment is not available.</p>
2. Select and pre-form material	<p>2.1 <i>Materials suitable for making spheres or beads</i> are selected.</p> <p>2.2 Opal is performed using saw or grinder to produce required shape.</p> <p>2.3 Shape corners are ground to establish rounded form.</p>
3. Produce opal bead is drilled	<p>3.1 Holder template is filled with pre-formed beads (range of shapes).</p> <p>3.2 Pre-formed beads in bead mill are ground using #120 silicon carbide powders until they are rounded.</p> <p>3.3 The holder template is changed to a small size if necessary.</p> <p>3.4 Faulty or broken opal is removed from the bead mill.</p> <p>3.5 Beads are removed from the bead mill and clean.</p>
4. Drill beads	<p>4.1 Beads are selected for drilling.</p> <p>4.2 Bead is placed in bead vice, half way is drilled into the bead, alignment is turned over, checked and the other half is drilled ensuring a cut hole through the bead.</p>
5. Polish beads	<p>5.1 Cleaned beads are placed in tumble polisher with increasingly fine <i>grinding medium</i>.</p> <p>5.2 Tumbler and beads are cleaned at every change over.</p> <p>5.3 Beads are cleaned thoroughly after the final grind, placed in the tumbler with <i>polishing medium</i> and tumbled to a high lustre.</p> <p>5.4 Finished beads are cleaned thoroughly with water.</p>

6. Produce opal spheres	<p>6.1 Opals are selected to make spheres and pre-form the spheres.</p> <p>6.2 The spheres in a sphere maker are ground with water and increasingly fine grinding medium.</p> <p>6.3 Spheres are cleaned thoroughly at each change over.</p> <p>6.4 Cleaned sphere is polished with polishing medium and water using leather sphere cups to desired polish.</p>
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Variable	Range
Bead mill, sphere making equipment and drills	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Arrowhead Gem craft (USA) Sphere Machine • E & J Adams Lapidary (USA) Sphere Machine • home-made equipment • Mahashi (Japan) Bead Mill • Richardson's (USA) Sphere Machine.
Maintenance areas	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • bead mill: <ul style="list-style-type: none"> ➤ all bearings ➤ all electrics ➤ bead holders and wear factor ➤ bottom rotating disc and wear factor ➤ rubber pad on top rotating disc • sphere makers: <ul style="list-style-type: none"> ➤ all electrics ➤ assorted sphere cups ➤ polishing pads ➤ Reduction boxes.
Materials suitable for making spheres and beads	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • any opal material, taking into account a yield factor or recovery rate of only 10% to 15% from a given ounce of rough opal • beads of a variety of regular or free form shapes • Spheres cut from any opal material, with consideration of yield factor.
Grinding mediums	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • diamond powder #80 through to #1200 • Silicon carbide grit #80 through to #1200.
Polishing mediums	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • cerium or tin oxide • Diamond powder #3000 through to #100,000.

Evidence Guide

Critical aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • Identify and safely use machinery and equipment to cut and polish opal beads and spheres to meet the requirements of industry.
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Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> • Machinery, equipment and consumables required to produce opal beads and spheres.
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> • critical thinking and analytical skills to investigate other methods of making spheres and beads where commercial equipment isn't available • planning and organising skills to organise required materials • problem-solving skills to deal with contingencies • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • use appropriate machinery and equipment • Select appropriate material for beads and spheres.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Facet Precious Gemstones
Unit Code	MIN LAP4 04 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to use a faceting machine to facet semi-precious gemstones, including selecting material, pre-forming, and cutting and polishing a selected stone. The machine may be used to produce a traditional faceted gemstone and also to complete a range of other tasks, such as making cubes from opal material.

Elements	Performance Criteria
1. Set up faceting equipment	<p>1.1 Faceting machines are set up to manufacturers' specifications identifying machine components and laps.</p> <p>1.2 Manufacturers' maintenance checklist is completed.</p> <p>1.3 Index wheels are investigated for quill and main and critical angles identified for opal.</p>
2. Select, pre-shape and dop selected gem piece	<p>2.1 Piece of opal suitable for faceting is selected.</p> <p>2.2 Piece is pre-shaped using faceting machine or bench grinder to establish crown and pavilion.</p> <p>2.3 Dop stone and work on pavilion first.</p>
3. Grind, sand and polish pavilion	<p>3.1 Dopped stone is placed in quill and aligned to create girdle.</p> <p>3.2 Girdle is ground to desired shape on medium to fine lap.</p> <p>3.3 Main facets are ground at main angle on medium to fine lap.</p> <p>3.4 Break facets are ground at girdle break angle on fine lap.</p> <p>3.5 Culet facets are ground at culet angle on fine or pre-polish lap.</p> <p>3.6 All pavilion facets including girdle are fine lapped, pre-polished and polished.</p>
4. Transfer stone	<p>4.1 Stone is transferred to suitable dop.</p> <p>4.2 Crown dop is removed and new dop and stone are placed in faceting quill.</p>
5. Grind, pre-polish and polish crown	<p>5.1 Girdle facet on lap is placed at 90°, index setting 64 or 96 and lock quill.</p> <p>5.2 Girdle break facets are ground at break angle establishing girdle thickness, on a medium to fine lap.</p> <p>5.3 Main facets are ground at main angle on fine lap.</p>

	<p>5.4 Table facet on fine lap is cut to 40% of total width of stone.</p> <p>5.5 All crown facets are pre-polished.</p> <p>5.6 Star facets are ground using pre-polish lap.</p> <p>5.7 All facets are polished.</p> <p>5.8 Stone is removed from dop and cleaned.</p>
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Variable	Range
Faceting machines	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Facet on (USA) • Gemmasta (Aus) • Graves (USA) • jamb peg • Platform • Poly-Metrics (USA) • Post • Raytech (USA) • Ultra Tec (USA).
Machine components	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • angle venire (protractor) • coarse and fine height adjuster • coolant tank • forward and reverse switch • hand piece (quill) • index wheel • master lap • radial venire (cheater) • sliding post • Variable speed control.
Laps' diamond grit size	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • coarse #80, #100, #120, #180 • fine #800, #1000, #1200 • medium #220, #320, #360, #400, #600 • polish #14000, #50000, #10000 • Pre-polish #2400, #3000, #8000.
Maintenance checklist	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • check electrics regularly for faults and water seepage • cover machine when not in use • keep all laps separate from each other • keep whole machine clean • oil and clean moving parts • read manufacturer manual and keep near machine.
Opal suitable for faceting	<ul style="list-style-type: none"> • May include but not limited to: • Australian clear jelly opal • Australian electric blue opal • contra-luz

	<ul style="list-style-type: none"> • Mexican cherry opal • Mexican fire opal • any transparent opal.
Angles	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • critical angle $43\frac{1}{2}^{\circ}$ • crown main 43° • culet angle 44° • girdle breaks, main angle plus 6° to 15° • pavilion main 45° • star facets, main angle minus 15° • Table facet 0°.

Evidence Guide	
Critical aspects of Competence	<p>Demonstrate knowledge and skills to:</p> <ul style="list-style-type: none"> • select opal pieces suitable for faceting • use faceting equipment to produce and polish a faceted opal that conforms to industry standards • follow all OHS requirements for machinery and equipment procedures
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • suitability of opal pieces for faceting • equipment and consumables required for opal faceting process • industry standards for faceting
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • critical thinking and analytical skills to select appropriate opal pieces • problem-solving skills to deal with contingencies and OHS issues • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • facet, grind and polish stones and maintain equipment • set up equipment to manufacturer specifications.
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level IV	
Unit Title	Production Cut and Polish Opal
Unit Code	MIN LAP4 05 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to cut and polish opal to meet trade requirements so that the operation is completed in minimum time Those applying the skills and knowledge covered by this unit cut and polish opals on a continuous basis producing pieces that comply with trade requirements. The cutting must be done in such a way that the cutting business is viable and the stone meets trade requirements.

Elements	Performance Criteria
1. Select the machinery and consumables for production cutting opal	<p>1.1 The machinery, consumables and adhesives are selected.</p> <p>1.2 The lighting equipment is selected for UV-sensitive adhesives.</p> <p>1.3 Material Safety Data Sheets (MSDS) are obtained for materials used.</p>
2. Identify and coordinate resources	<p>2.1 Sources and cost of rough opal are determined and supplies obtained.</p> <p>2.2 Sources and cost of consumables, including backing material and triplet tops are determined, and supplies obtained.</p> <p>2.3 Information about suppliers and costs is recorded.</p> <p>2.4 Stock management system is set up.</p>
3. Review the layout of the workshop and set up machinery and equipment for production cutting	<p>3.1 Workshop layout is reviewed in relation to production cutting and adjustments are made to facilitate workflow where required.</p> <p>3.2 Multi-blade saw, grinder, sander, polisher and lighting equipment are set up to manufacturers' specifications.</p> <p>3.3 Dopping rack and other racks and containers are set up as needed.</p>
4. Cut and polish opal to industry requirements within the time constraints of the production process	<p>4.1 Opals are cut and polished to trade requirements within the predetermined time constraints.</p> <p>4.2 Appropriate dopping techniques are used for production work.</p> <p>4.3 Opals trade requirements for standard millimetre sizes are ensured for particular applications.</p> <p>4.4 OHS requirements are followed for machinery, equipment and consumables.</p>

Variable	Range		
Machinery	May include but not limited to: <ul style="list-style-type: none"> • cabochon cutting machine • cabochon pre-former • diamond sintered wheel grinder • faceting unit pre-former • high speed sanding unit • multi-blade trim saw • pumice pre-polishing unit • soft diamond wheel sanding and polishing unit • spongy wheel sanding unit • triplet slicing machine • UV light box • vibro tumbler. 		
Consumables and adhesives	May include but not limited to: <ul style="list-style-type: none"> • #400 acid treated silicon carbide powder • backing material • blackening agent • dopping wax or adhesive • epoxy adhesive • grinding wheels • polishing powder (cerium oxide) • polishing wheels (diamond or felt) • red sealing wax • rough opal • sanding wheels (diamond or spongy) • trim saw blades • triplet slicing blades: 120, 140, 160 and 180 • triplet tops • UV adhesive • Water and electricity. 		
Backing materials	May include but not limited to: <ul style="list-style-type: none"> • black jade • black potch (best) • boulder iron stone • clear or transparent potch • dark grey potch • glass (triplet only) • obsidian (black) • vitrolite (triplet only). 		
Stock management system	May include but not limited to: <ul style="list-style-type: none"> • avoiding cutting irregular sizes or shapes to minimise slow stock • maintaining rough opal and consumable supplies • regularly checking continuity of consumables with suppliers 		
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	<ul style="list-style-type: none"> • Stocking popular sizes to meet new markets.
Doping techniques	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • 5-minute epoxy glue • aluminium or wooden dop sticks • collapsible rack for holding dop sticks • green or red sealing wax • vacuum doping • Wood glues.
Standard millimetre sizes	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • consistent accurate sizes • no grinding marks or sanding marks on surface.

Evidence Guide

Critical aspects of Competence	<p>Demonstrate knowledge and skills to:</p> <ul style="list-style-type: none"> • cut opal in a production environment meeting industry and quality standards and working with commercial constraints • select machinery and consumables • organise the workshop for production cutting • Handle OHS issues appropriately.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • characteristics of opal gemstone structure • suitability of opal pieces for carving • opal carving process, including required equipment and consumables • procedures and equipment used in production cutting • where to locate and cost materials for production cutting • stock management requirements • safety issues associated with opal cutting and polishing machinery
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • planning and organising skills to: <ul style="list-style-type: none"> ➢ select appropriate tools, equipment and materials ➢ set up a workshop environment • problem-solving skills to correct OHS issues • literacy skills to interpret technical documentation • numeracy skills to: <ul style="list-style-type: none"> ➢ cost materials ➢ use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> • choose appropriate stone for cutting • cut, sand and polish opals using correct technique • correct faults and defects • source materials • follow the procedures for stock management • service and test equipment • Technology skills to set up and use production equipment.
Resources	Access is required to real or appropriately simulated

Implication	situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Perform Gemstone Setting
Unit Code	MIN LAP4 06 0114
Unit Descriptor	This unit covers performing most diamond and gem setting styles by manual methods.

Elements	Performance Criteria
1. Identify setting requirements	1.1 Setting requirements are identified. 1.2 Gemstone status is assessed. 1.3 Setting metal is identified.
2. Prepare materials and equipment for setting	2.1 Tools are selected for use in achieving the desired outcome. 2.2 Tools are prepared and maintained to produce required specifications. 2.3 Metal is prepared for setting.
3. Perform gemstone setting	3.1 Gemstones are secured correctly. 3.2 Setting metal is finished/burnished to specification.
4. Identify setting requirements	4.1 Setting requirements are identified. 4.2 Gemstone status is assessed. 4.3 Setting metal is identified.

Variable	Range
Setting requirements	May include but not limited to: <ul style="list-style-type: none"> Type of setting, specific product handling measures
Tools	May include but not limited <ul style="list-style-type: none"> Various holding and securing devices, pliers, burrs, scaupers, burnishes, emery, beaders

Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> setting processes and terminology gemstone features and handling procedures suitability of metal for carving and setting maintenance of tools setting techniques, processes and procedures working

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	properties of materials
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • selecting and preparing tools • identifying metals • identifying gemstone features • adjusting, sharpening and maintaining tools • preparing metals • securing gemstones • Reading and interpreting routine information on written job instructions, specifications and standard operating procedures.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Opal Carving
Unit Code	MIN LAP4 07 0114
Unit Descriptor	This unit describes the performance outcomes, skills and knowledge required to carve Cameos, Intaglios, Ornamental or Utilitarian Items from gem materials, including all the processes from the selection of the piece of opal to the completed polished carving.

Elements	Performance Criteria
1. Select the stone and clarify the required outcome	<p>1.1 Available pieces of rough opal are reviewed to determine the suitability or necessity for carving.</p> <p>1.2 The potential of pieces of opal is assessed for carving depending on the shape, size, position of the colour, and other characteristics of the stone.</p> <p>1.3 The stone is rubbed removing foreign materials and eliminating faults.</p> <p>1.4 The potential for enhancing stone is discussed with colleagues and client.</p> <p>1.5 The approach to be taken is determined to achieve the potential of the stone and the value of the finished product maximised.</p>
2. Select tools, equipment and materials	<p>2.1 Carving tools and equipment needed to achieve the desired result are selected.</p> <p>2.2 Consumables are selected for sanding and polishing the carving.</p> <p>2.3 OHS issues are determined and complied with OHS procedures when using the equipment and consumables.</p>
3. Carve Gem	<p>3.1 The stone is cleaned removing foreign materials and eliminating faults.</p> <p>3.2 Stone is ground to desired shape using high speed fine grit burr and accommodating existing colour and patterns.</p> <p>3.3 Ensure opal is not heated.</p> <p>3.4 Carving is sanded with suitable sanding mediums, from coarse to extra fine.</p>
4. Polish the carving	<p>4.1 Entire carving is polished with polishing compound.</p> <p>4.2 Magnification is used to check the finished carving for faults and if necessary rectify faults.</p>
5. Ensure that industry standards are	<p>5.1 The carving is checked to ensure that industry practice and expectations are satisfied.</p>

satisfied	5.2 Any faults are corrected or defected if required.
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Variable	Range
Carving tools	<p>May include but limited to:</p> <ul style="list-style-type: none"> • assorted mandrels • coarse, medium, fine and extra fine wheels • diamond grinding burrs of assorted shapes • diamond polishing wheels of assorted shapes • diamond sanding wheels of assorted shapes • felt polishing buffs • sanding discs, assorted grit sizes and diameters • silicon carbide grinding burrs of assorted shapes • supporting equipment: <ul style="list-style-type: none"> ➢ drip feed watering system ➢ dust extraction system • Wooden polishing buffs.
Carving equipment	<p>May include but limited to:</p> <ul style="list-style-type: none"> • air power tools • centre point carvers • flexible drive • hobby carvers • micro motor • Personal Protective Equipment (PPE).
OHS issues	<p>May include but limited to:</p> <ul style="list-style-type: none"> • contamination • eye protection • guarding • keeping a clean work area • minimising dust inhalation • maintaining equipment • Unattended running machinery.
Sanding mediums	<p>May include but limited to:</p> <ul style="list-style-type: none"> • coarse, medium, fine and extra fine wheels of assorted shapes • diamond powders up to #1200 on felt/wooden wheels • pumice powders on felt wheels • sandpaper wheels and discs up to #1200, assorted sizes • Silicon carbide powders up to #1200 on felt/wooden wheels.
Polishing compounds	<p>May include but limited to:</p> <ul style="list-style-type: none"> • cerium oxide on felt, leather or wooden wheels or discs • Diamond compounds from #1200 to #100,000 tin oxide.
Industry practice and expectations	<p>May include but limited to:</p> <ul style="list-style-type: none"> • no sharp or protruding areas • when shaping, keep the setting into jewellery in mind • very high polish

	<ul style="list-style-type: none"> • no grinding marks or sanding marks on surface • no cracks or obvious inclusions that should have been removed with initial grinding • avoiding making the carving too large • Considering how strength of colour may affect the need for detail.
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Evidence Guide	
Critical aspects of Competence	Demonstrate knowledge and skills to: <ul style="list-style-type: none"> • select opal pieces suitable for carving • carve the opal using opal carving equipment to industry standard • polish the carving according to industry standards
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> • characteristics of opal gemstone structure • suitability of opal pieces for carving • opal carving process, including required equipment and consumables • safety issues associated with opal cutting and polishing machinery • industry standards for carving
Underpinning Skills	Demonstrate skills of: <ul style="list-style-type: none"> • communication skills to discuss potential for enhancing stone with colleagues and clients • critical thinking and analytical skills to assess the potential of pieces and choose the best approach • planning and organising skills to select appropriate tools, equipment and materials • numeracy skills to use numerical features of machinery • technical skills to: <ul style="list-style-type: none"> ➢ choose appropriate stone for cutting ➢ cut, sand and polish opals using correct technique ➢ Correct faults and defects.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Market Gemstones
Unit Code	MIN LAP4 08 0114
Unit Descriptor	This unit covers skill, knowledge & attitude of designing and co-coordinating a marketing plan. It requires the application of skills and knowledge to analyze market conditions and access and evaluate advice on market and potential distribution options. In addition, it requires an awareness of industry structures and business trends. The functions associated with this standard would be performed independently and under limited supervision.

Elements	Performance Criteria
1. Evaluate commerce all in formation	<p>1.1 Relevant information is researched and analyzed to identify market trends.</p> <p>1.2 Competing products are identified and evaluated to determine strengths and weaknesses of own products.</p> <p>1.3 Collected information is presented in a manner which provides clear and concise information.</p> <p>1.4 Market and situation analysis is conducted using established techniques in accordance with available budget and the need for external assistance.</p>
2. Identify marketing requirements	<p>2.1 Materials are created that enhance the product and commercial presentation.</p> <p>2.2 Priorities, responsibilities, timelines and budgets are recorded and communicated to appropriate colleagues.</p> <p>2.3 Proximity of the market area is evaluated.</p>
3. Determine promotional strategies	<p>3.1 Detailed plans for promotional activities are prepared and recorded according to enterprise guidelines.</p> <p>3.2 Outlined in the promotional plan are objectives, level of exposure to be achieved and available markets.</p> <p>3.3 Strategies are taken account of feedback from operational staff, time management and scheduling issues, and resource constraints.</p> <p>3.4 Marketing objectives are established based on new and retained business consistent with product and operational business plans.</p>
4. Organize implementation	<p>4.1 Criteria are established to measure impact and success of promotional activities.</p> <p>4.2 Adjustments to the promotional strategy product distribution are made promptly to ensure consistency of</p>

	<p>promotion.</p> <p>4.3 Required distribution channels are defined and established.</p> <p>4.4 Product documentation is distributed on time in the specified quantities.</p>
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Variable	Range
Information	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • market information • customer/client feedback • Higher learning and Research Institutions
Market Area	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • National and International Trade fairs • Exhibitions • Shops
Promotional activities	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Printed medias • Electronic medias • Web site • Display

Evidence Guide	
Critical aspects of Competence	<p>Demonstrate knowledge and skills to:</p> <ul style="list-style-type: none"> • Research and analyze relevant information to identify market trends. • Identify and evaluate competing products to determine strengths and weaknesses of own products. • Create promotional materials that enhance the product and commercial presentation. • Establish marketing objectives based on new and retained business consistent with product and operational business plans. • Make adjustments to the promotional strategy product distribution promptly to ensure consistency of promotion. • Defined and established required distribution channels.
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • financial management and budgeting • rural organizations policies and procedures for marketing and promotions • sales and marketing principles and practices • sound knowledge of promotional activities including, trade shows, in-house promotions, advertising, public relations, familiarizations, signage, display and word of mouth • relevant State/Territory legislative requirements with regard to OHS and risk management procedures for management of promotional activities • legal issues that affect marketing activities (trade

	<p>practices, Fair Trading Acts, Sales of Goods Acts)</p> <ul style="list-style-type: none"> • industry and marketing knowledge including sales networks and distribution systems, and customer trends and preferences • Demographic studies and their application in the development of a marketing plan.
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Identified and evaluated competing products to determine strengths and weaknesses of own products. • Created promotional materials that enhance the product and commercial presentation. • Established marketing objectives based on new and retained business consistent with product and operational business plans
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level IV	
Unit Title	Plan and Organize Work
Unit Code	MIN LAP4 09 0114
Unit Descriptor	This unit covers the knowledge, skills and attitude required in planning and organizing work activities in a production application. It may be applied to a small independent operation or to a section of a large organization.

Elements	Performance Criteria
1. Set objectives.	<p>1.1 Objectives are planned consistent with and linked to work activities in accordance with organizational aims.</p> <p>1.2 Objectives are stated as measurable targets with clear time frames.</p> <p>1.3 Support and commitment of team members are reflected in the objectives.</p> <p>1.4 Realistic and attainable objectives are identified.</p>
2. Plan and schedule work activities.	<p>2.1 Tasks/work activities to be completed are identified and prioritized as directed.</p> <p>2.2 Tasks/work activities are broken down into steps in accordance with set time frames and achievable components.</p> <p>2.3 Task/work activities are assigned to appropriate team or individuals in accordance with agreed functions.</p> <p>2.4 Resources are allocated as per requirements of the activity.</p> <p>2.5 Schedule of work activities is coordinated with personnel concerned.</p>
3. Implement work plans.	<p>3.1 Work methods and practices are identified in consultation with personnel concerned.</p> <p>3.2 Work plans are implemented in accordance with set time frames, resources and standards.</p>
4. Monitor work activities.	<p>4.1 Work activities are monitored and compared with set objectives.</p> <p>4.2 Work performance is monitored.</p> <p>4.3 Deviations from work activities are reported and recommendations are coordinated with appropriate personnel and in accordance with set standards.</p> <p>4.4 Reporting requirements are complied with in accordance with recommended format.</p> <p>4.5 Timeliness of report is observed.</p>

	4.6 Files are established and maintained in accordance with standard operating procedures.
5. Review and evaluate work plans and activities.	<p>5.1 Work plans, strategies and implementation are reviewed based on accurate, relevant and current information.</p> <p>5.2 Review is done based on comprehensive consultation with appropriate personnel on outcomes of work plans and reliable feedback.</p> <p>5.3 Results of review are provided to concerned parties and formed as the basis for adjustments/simplifications to be made to policies, processes and activities.</p> <p>5.4 Performance appraisal is conducted in accordance with organization rules and regulations.</p> <p>5.5 Performance appraisal report is prepared and documented regularly as per organization requirements.</p> <p>5.6 Recommendations are prepared and presented to appropriate personnel/authorities.</p> <p>5.7 Feedback mechanisms are implemented in line with organization policies.</p>

Variable	Range
Objectives	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Specific • General
Resources	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Personnel • Equipment and technology • Services • Supplies and materials • Sources for accessing specialist advice • Budget
Schedule of work activities	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Daily • Work-based • Contractual Regular
Work methods and practices	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Legislated regulations and codes of practice • Industry regulations and codes of practice • Occupational health and safety practices
Work plans	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Daily work plans • Project plans • Program plans • Resource plans

	<ul style="list-style-type: none"> • Skills development plans • Management strategies and objectives
Standards	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Performance targets • Performance management and evaluation systems • Occupational standards • Employment contracts • Client contracts • Discipline procedures • Workplace assessment guidelines • Internal quality assurance • Internal and external accountability and auditing requirements • Training Regulation Standards • Safety Standards
Appropriate personnel/ authorities	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Appropriate personnel include: • Management • Line Staff
Feedback mechanisms	<p>May include but not limited to:</p> <ul style="list-style-type: none"> • Verbal feedback • Informal feedback • Formal feedback • Questionnaire • Survey • Group discussion

Evidence Guide

Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • set objectives • planned and scheduled work activities • implemented work plans • monitored work activities • reviewed and evaluated work plans and activities
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • organization's strategic plan, policies rules and regulations, laws and objectives for work unit activities and priorities • organizations policies, strategic plans, guidelines related to the role of the work unit • team work and consultation strategies
Underpinning Skills	<p>Demonstrates skill to:</p> <ul style="list-style-type: none"> • plan • lead • organize • coordinate • communicate • inter-and intra-person/motivation skills

	<ul style="list-style-type: none"> • present
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Migrate to New Technology
Unit Code	<u>MIN LAP4 10 0114</u>
Unit Descriptor	This unit defines the competence required to apply skills and knowledge in using new or upgraded technology. The rationale behind this unit emphasizes the importance of constantly reviewing work processes, skills and techniques in order to ensure that the quality of the entire business process is maintained at the highest level possible through the appropriate application of new technology. To this end, the person is typically engaged in on-going review and research in order to discover and apply new technology or techniques to improve aspects of the organization's activities.

Elements	Performance Criteria
1. Apply existing knowledge and techniques to technology and transfer	<p>1.1 Situations are identified where existing knowledge can be used as the basis for developing new skills.</p> <p>1.2 New or upgraded technology skills are acquired and used to enhance learning.</p> <p>1.3 New or upgraded equipment are identified, classified and used where appropriate, for the benefit of the organization.</p>
2. Apply functions of technology to assist in solving organizational problems	<p>2.1 Testing of new or upgraded equipment is conducted according to the specification manual.</p> <p>2.2 Features of new or upgraded equipment are applied within the organization</p> <p>2.3 Features and functions of new or upgraded equipment are used for solving organizational problems</p> <p>2.4 Sources of information relating to new or upgraded equipment are accessed and used</p>
3. Evaluate new or upgraded technology performance	<p>3.1 New or upgraded equipment is evaluated for performance, usability and against OHS standards.</p> <p>3.2 Environmental considerations are determined from new or upgraded equipment.</p> <p>3.3 Feedback is sought from users where appropriate.</p>

Variables	Range
Environmental Considerations	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> recycling, safe disposal of packaging (e.g. cardboard, polystyrene, paper, plastic) and correct disposal of waste materials by an authorized body
Feedback	<p>May include but is not limited to:</p>

	<ul style="list-style-type: none"> • surveys, • questionnaires, • interviews and meetings.
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Evidence Guide	
Critical Aspects of Competence	Competence must confirm the ability to transfer the application of existing skills and knowledge to new technology
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Broad awareness of current technology trends and directions in the industry (e.g. systems/procedures, services, new developments, new protocols) • Knowledge of vendor product directions • Ability to locate appropriate sources of information regarding metal manufacturing and new technologies • Current industry products/services, procedures and techniques with knowledge of general features • Information gathering techniques
Underpinning Skills	<p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Research skills for identifying broad features of new technologies • Ability to assist in the decision making process • Literacy skills in regard to interpretation of technical manuals • Ability to solve known problems in a variety of situations and locations • Evaluate and apply new technology to assist in solving organizational problems • General analytical skills in relation to known problems
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Establish Quality Standards
Unit Code	MIN LAP4 11 0114
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to establish quality specifications for work outcomes and work performance. It includes monitoring and participation in maintaining and improving quality, identifying critical control points in the production of quality output and assisting in planning and implementing of quality assurance procedures.

Elements	Performance Criteria
1. Establish quality specifications for product	<p>1.1 Market specifications are sourced and legislated requirements identified.</p> <p>1.2 Quality specifications are developed and agreed upon</p> <p>1.3 Quality specifications are documented and introduced to organization staff / personnel in accordance with the organization policy</p> <p>1.4 Quality specifications are updated when necessary</p>
2. Identify hazards and critical control points	<p>2.1. Critical control points impacting on quality are identified.</p> <p>2.2. Degree of risk for each hazard is determined.</p> <p>2.3. Necessary documentation is accomplished in accordance with organization quality procedures</p>
3. Assist in planning of quality assurance procedures	<p>3.1 Procedures for each identified control point are developed to ensure optimum quality.</p> <p>3.2 Hazards and risks are minimized through application of appropriate controls.</p> <p>3.3 Processes are developed to monitor the effectiveness of quality assurance procedures.</p>
4. Implement quality assurance procedures	<p>4.1 Responsibilities for carrying out procedures are allocated to staff and contractors.</p> <p>4.2 Instructions are prepared in accordance with the enterprise's quality assurance program.</p> <p>4.3 Staff and contractors are given induction training on the quality assurance policy.</p> <p>4.4 Staff and contractors are given in-service training relevant to their allocated safety procedures.</p>
5. Monitor quality of work outcome	<p>5.1 Quality requirements are identified.</p> <p>5.2 Inputs are inspected to confirm capability to meet quality requirements.</p>

	<p>5.3 Work is conducted to produce required outcomes.</p> <p>5.4 Work processes are monitored to confirm quality of output and/or service.</p> <p>5.5 Processes are adjusted to maintain outputs within specification.</p>
6. Participate in maintaining and improving quality at work	<p>6.1 Work area, materials, processes and product are routinely monitored to ensure compliance with quality requirements.</p> <p>6.2 Non-conformance in inputs, process, product and/or service is identified and reported according to workplace reporting requirements.</p> <p>6.3 Corrective action is taken within level of responsibility, to maintain quality standards.</p> <p>6.4 Quality issues are raised with designated personnel.</p>
7. Report problems that affect quality	<p>7.1 Potential or existing quality problems are recognized.</p> <p>7.2 Instances of variation in quality are identified from specifications or work instructions.</p> <p>7.3 Variation and potential problems are reported to supervisor/manager according to enterprise guidelines.</p>

Variable	Range
Sourced	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • End-users • Customers or stakeholders
Legislated requirements	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Verification of product quality as part of consumer legislation or specific legislation related to product content or composition.
Safety procedures.	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Use of tools and equipment for fabrication/production/manufacturing works • Workplace environment and handling of material safety, • Following occupational health and safety procedures designated for the task • Respect the policies, regulations, legislations, rule and procedures for manufacturing/production/fabrication works

Evidence Guide	
Critical Aspect of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Monitor quality of work • Establish quality specifications for product • Participate in maintaining and improving quality at work • Identify hazards and critical control points in the production of quality product

	<ul style="list-style-type: none"> • Assist in planning of quality assurance procedures • Report problems that affect quality • Implement quality assurance procedures
Underpinning Knowledge	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • work and product quality specifications • quality policies and procedures • improving quality at work • hazards and critical points of operation • obtaining and using information • applying federal and regional legislation within day-to-day work activities • accessing and using management systems to keep and maintain accurate records • requirements for correct preparation and operation • technical writing
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • monitor quality of work • establish quality specifications for product • participate in maintaining and improving quality at work • identify hazards and critical control points in the production of quality product • assist in planning of quality assurance procedures • report problems that affect quality • implement quality assurance procedures
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Develop Individuals and Team
Unit Code	MIN LAP4 12 0114
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to determine individual and team development needs and facilitate the development of the workgroup.

Elements	Performance Criteria
1. Provide team leadership	<p>1.1 Learning and development needs are systematically identified and implemented in line with organizational requirements.</p> <p>1.2 Learning plan to meet individual and group training and developmental needs is collaboratively developed and implemented.</p> <p>1.3 Individuals are encouraged to self-evaluate performance and identify areas for improvement.</p> <p>1.4 Feedback on performance of team members is collected from relevant sources and compared with established team learning process.</p>
2. Foster individual and organizational growth	<p>2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of Competence standards.</p> <p>2.2 Learning delivery methods are made appropriate to the learning goals, the learning style of participants and availability of equipment and resources.</p> <p>2.3 Workplace learning opportunities and coaching/mentoring assistance are provided to facilitate individual and team achievement of competencies.</p> <p>2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.</p>
3. Monitor and evaluate workplace learning	<p>3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements.</p> <p>3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support.</p> <p>3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning.</p> <p>3.4 Records and reports of competence are maintained within organizational requirement.</p>

4. Develop team commitment and cooperation	<p>4.1 Open communication processes to obtain and share information is used by team.</p> <p>4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities.</p> <p>4.3 Mutual concern and camaraderie are developed in the team.</p>
5. Facilitate accomplishment of organizational goals	<p>5.1 Team members are actively participated in team activities and communication processes.</p> <p>5.2 Individual and joint responsibility is developed by team's members for their actions.</p> <p>5.3 Collaborative efforts are sustained to attain organizational goals.</p>

Variable	Range
Learning and development needs	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Coaching, monitoring and/or supervision • Formal/informal learning program • Internal/external training provision • Work experience/exchange/opportunities • Personal study • Career planning/development • Performance evaluation • Workplace skills assessment • Recognition of prior learning
Organizational requirements	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Quality assurance and/or procedures manuals • Goals, objectives, plans, systems and processes • Legal and organizational policy/guidelines and requirements • Safety policies, procedures and programs • Confidentiality and security requirements • Business and performance plans • Ethical standards • Quality and continuous improvement processes and standards
Feedback on performance	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Formal/informal performance evaluation • Obtaining feedback from supervisors and colleagues • Obtaining feedback from clients • Personal and reflective behavior strategies • Routine and organizational methods for monitoring service delivery
Learning delivery methods	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • On the job coaching or monitoring • Problem solving

	<ul style="list-style-type: none"> • Presentation/demonstration • Formal course participation • Work experience and involvement in professional networks • Conference and seminar attendance
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Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • identify and implement learning opportunities for others • give and receive feedback constructively • facilitate participation of individuals in the work of the team • negotiate plans to improve the effectiveness of learning • prepare learning plans to match skill needs • access and designate learning opportunities
Underpinning Knowledge and Attitude	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • coaching and monitoring principles • how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective • how to facilitate team development and improvement • methods and techniques to obtain and interpreting feedback • methods for identifying and prioritizing personal development opportunities and options • career paths and competence standards in the industry
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • read and understand a variety of texts, preparing general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management • communicate including receiving feedback and reporting, maintaining effective relationships and conflict management • plan and organize required resources and equipment to meet learning needs • coach and mentor skills to provide support to colleagues • report to organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitate and conduct small group training sessions • relate to people from a range of social, cultural, physical and mental backgrounds
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level IV	
Unit Title	Utilize Specialized Communication Skills
Unit Code	MIN LAP4 13 0114
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to use specialized communication skills to meet specific needs of internal and external clients, conduct interviews, facilitate group discussions, and contribute to the development of communication strategies.

Elements	Performance Criteria
1. Meet common and specific communication needs of clients and colleagues	<p>1.1 Specific communication needs of clients and colleagues are identified and met.</p> <p>1.2 Different approaches are used to meet communication needs of clients and colleagues.</p> <p>1.3 Conflict is addressed promptly and in a timely way and in a manner which does not compromise the standing of the organization.</p>
2. Contribute to the development of communication strategies	<p>2.1 Strategies for internal and external dissemination of information are developed, promoted, implemented and reviewed as required.</p> <p>2.2 Channels of communication are established and reviewed regularly.</p> <p>2.3 Coaching in effective communication is provided.</p> <p>2.4 Work related network and relationship are maintained as necessary.</p> <p>2.5 Negotiation and conflict resolution strategies are used where required.</p> <p>2.6 Communication with clients and colleagues is appropriate to individual needs and organizational objectives.</p>
3. Represent the organization	<p>3.1 When participating in internal or external fora, presentation is relevant, appropriately researched and presented in a manner to promote the organization.</p> <p>3.2 Presentation is made clear and sequential and delivered within a predetermined time.</p> <p>3.3 Appropriate media is utilized to enhance presentation.</p> <p>3.4 Differences in views are respected.</p> <p>3.5 Written communication is made consistent with organizational standards.</p> <p>3.6 Inquiries are responded in a manner consistent with</p>

	organizational standard.
4. Facilitate group discussion	<p>4.1 Mechanisms which enhance effective group interaction are defined and implemented.</p> <p>4.2 Strategies which encourage all group members to participate are used routinely.</p> <p>4.3 Objectives and agenda are routinely set and followed for meetings and discussions.</p> <p>4.4 Relevant information is provided to group to facilitate outcomes.</p> <p>4.5 Evaluation of group communication strategies is undertaken to promote participation of all parties.</p> <p>4.6 Specific communication needs of individuals are identified and addressed.</p>
5. Conduct interview	<p>5.1 A range of appropriate communication strategies are employed in interview situations.</p> <p>5.2 Different types of interview are conducted in accordance with the organizational procedures.</p> <p>5.3 Records of interviews are made and maintained in accordance with organizational procedures.</p> <p>5.4 Effective questioning, listening and nonverbal communication techniques are used to ensure that required message is communicated.</p>

Variable	Range
Strategies	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Recognizing own limitations • Utilizing techniques and aids • Providing written drafts • Verbal and non verbal communication
Effective group interaction	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Identifying and evaluating what is occurring within an interaction in a non-judgmental way • Using active listening • Making decision about appropriate words, behavior • Putting together response which is culturally appropriate • Expressing an individual perspective • Expressing own philosophy, ideology and background and exploring impact with relevance to communication
Interview situations	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Establish rapport • obtain facts and information • Facilitate resolution of issues • Develop action plans • Diffuse potentially difficult situation

Types of Interview	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Related to staff issues • Routine • Confidential • Evidential • Non-disclosure • Disclosure
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Evidence Guide	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Demonstrate effective communication skills with clients and work colleagues accessing service • Adopt relevant communication techniques and strategies to meet client particular needs and difficulties
Underpinning Knowledge and Values	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • communication process • dynamics of groups and different styles of group leadership • communication skills relevant to client groups
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • full range of communication techniques including: <ul style="list-style-type: none"> ➢ active listening ➢ feedback ➢ interpretation ➢ role boundaries setting ➢ negotiation ➢ establishing empathy ➢ communication strategies • communicate to fulfill job roles as specified by the organization
Resource Implications	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Lapidary Level IV	
Unit Title	Manage and Maintain Small/Medium Business Operations
Unit Code	MIN LAP4 14 0114
Unit Descriptor	This unit covers the operation of day-to-day business activities in a micro or small business. The strategies involve developing, monitoring and managing work activities and financial information, developing effective work habits, and adjusting work schedules as needed.

Elements	Performance Criteria
1. Identify daily work requirements	<p>1.1 Work requirements are identified for a given time period by taking into consideration resources and constraints.</p> <p>1.2 Work activities are prioritized based on business needs, requirements and deadlines.</p> <p>1.3 If appropriate, work is allocated to relevant staff or contractors to optimize efficiency.</p>
2. Monitor and manage work	<p>2.1 People, resources and/or equipment are coordinated to provide optimum results.</p> <p>2.2 Staff, clients and/or contractors are communicated within a clear and regular manner, to monitor work in relation to business goals or timelines.</p> <p>2.3 Problem solving techniques are applied to work situations to overcome difficulties and achieve positive outcomes.</p>
3. Develop effective work habits	<p>3.1 Work and personal priorities are identified and a balance is achieved between competing priorities using appropriate time management strategies.</p> <p>3.2 Input from internal and external sources is sought and used to develop and refine new ideas and approaches.</p> <p>3.3 Business or inquiries is/are responded to promptly and effectively.</p> <p>3.4 Information is presented in a format appropriate to the industry and audience.</p>
4. Interpret financial information	<p>4.1 Relevant documents and reports are identified.</p> <p>4.2 Documents and reports are read and understood and any implications discussed with appropriate persons.</p> <p>4.3 Data and numerical calculations are analyzed, checked, evaluated, organized and reconciled.</p> <p>4.4 Daily financial records and cash flow are maintained correctly and in accordance with legal and accounting</p>

	<p>requirements.</p> <p>4.5 Invoices and payments are prepared and distributed in a timely manner and in accordance with legal requirements.</p> <p>4.6 Outstanding accounts are collected or followed-up on.</p>
5. Evaluate work performance	<p>5.1 Opportunities for improvements are monitored according to business demands.</p> <p>5.2 Work schedules are adjusted to incorporate necessary modifications to existing work and routines or changing needs and requirements.</p> <p>5.3 Proposed changes are clearly communicated and recorded to aid in future planning and evaluation.</p> <p>5.4 Relevant codes of practice are used to guide an ethical approach to workplace practices and decisions.</p>

Variable	Range
Resources	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • staff • money • time • equipment • space
Business goals	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • sales targets • budgetary targets • team and individual goals • production targets • reporting deadlines
Problem solving techniques	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • gaining additional research and information to make better informed decisions • looking for patterns • considering related problems or those from the past and how they were handled • eliminating possibilities • identifying and attempting sub-tasks • collaborating and asking for advice or help from additional sources
Time management strategies	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • prioritizing and anticipating • short term and long term planning and scheduling • creating a positive and organized work environment • clear timelines and goal setting that is regularly reviewed and adjusted as necessary • breaking large tasks into smaller tasks • getting additional support if identified and necessary

Internal and external sources	<p>May include but is not limited to:</p> <ul style="list-style-type: none"> • staff and colleagues • management, supervisors, advisors or head office • relevant professionals such as lawyers, accountants, management consultants • professional associations
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Evidence Guide			
Critical Aspects of Competence	<p>A person must be able to demonstrate:</p> <ul style="list-style-type: none"> • ability to identify daily work requirements and allocate work appropriately • ability to interpret financial documents in accordance with legal requirements 		
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Federal and Local Government legislative requirements affecting business operations, especially in regard to Occupational Health and Safety (OHS), equal employment opportunity, industrial relations and anti-discrimination • technical or specialist skills relevant to the business operation • relevant industry code of practice • planning techniques to establish realistic timelines and priorities • identification of relevant performance measures • quality assurance principles and methods • relevant marketing, management, sales and financial concepts • methods for monitoring performance and implementing improvements • structured approaches to problem solving, idea management and time management 		
Underpinning Skills	<p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • interpret legal requirements, company policies and procedures and immediate, day-to-day demands • communicate using questioning, clarifying, reporting, and giving and receiving constructive feedback • numeracy skills for performance information, setting targets and interpreting financial documents and reports • technical and analytical skills to interpret business document, reports and financial statements and projections • relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • solve problem and develop contingency plans • using computers and software packages to record and manage data and to produce reports • evaluate using assessment work and outcomes • observe for identifying appropriate people, resources and to monitor work 		
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Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Lapidary Level IV	
Unit Title	Apply Problem Solving Techniques and Tools
Unit Code	MIN LAP4 15 0114
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude required to apply scientific problem solving techniques and tools to enhance quality, productivity and other kaizen elements on continual basis.

Elements	Performance criteria
1. Identify and select theme/problem.	<p>1.1 Safety requirements are followed in accordance with safety plans and procedures.</p> <p>1.2 All possible problems related to the process /Kaizen elements are listed using statistical tools and techniques.</p> <p>1.3 All possible problems related to kaizen elements are identified and listed on Visual Management Board/Kaizen Board.</p> <p>1.4 Problems are classified based on obviousness of cause and action.</p> <p>1.5 Critical factors like the number of customers affected, Potentials for bottlenecks, and number of complaints etc... is selected.</p> <p>1.6 Problems related to priorities of Kaizen Elements are given due emphasis and selected.</p>
2. Grasp current status and set goal.	<p>2.1 The extent of the problem is defined.</p> <p>2.2 Appropriate and achievable goal is set.</p>
3. Establish activity plan.	<p>3.1 The problem is confirmed.</p> <p>3.2 High priority problem is selected.</p> <p>3.3 The extent of the problem is defined.</p> <p>3.4 Activity plan is established as per 5W1H.</p>
4. Analyze causes of a problem.	<p>4.1 All possible causes of a problem are listed.</p> <p>4.2 Cause relationships are analyzed using 4M1E.</p> <p>4.3 Causes of the problems are identified.</p> <p>4.4 Root causes are selected.</p> <p>4.5 The root cause which is most directly related to the problem is selected.</p> <p>4.6 All possible ways are listed using creative idea generation to eliminate the most critical root cause.</p>

	<p>4.7 The suggested solutions are carefully tested and evaluated for potential complications.</p> <p>4.8 Detailed summaries of the action plan are prepared to implement the suggested solution.</p>
5. Examine countermeasures and their implementation.	<p>5.1 Action plan is implemented by medium KPT members.</p> <p>5.2 Implementation is monitored according to the agreed procedure and activities are checked with preset plan.</p>
6. Assess effectiveness of the solution.	<p>6.1 Tangible and intangible results are identified.</p> <p>6.2 The results are verified over time.</p> <p>6.3 Tangible results are compared with targets using various types of diagram.</p>
7. Standardize and sustain operation.	<p>7.1 If the goal is achieved, the new procedures are standardized and made part of daily activities.</p> <p>7.2 All employees are trained on the new Standard Operating Procedures (SOPs).</p> <p>7.3 SOP is verified and followed by all employees.</p> <p>7.4 The next problem is selected to be tackled by the team.</p>

Variables	Range
Safety requirements	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • OHS requirements include legislation, material safety, managements system, hazardous substances and dangerous goods code and local safe operating procedures • Work is carried out in accordance with legislative obligations, environmental legislations, relevant health regulation, manual handling procedure and organization insurance requirements
Statistical tools and techniques	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • 7 QC tools may include: <ul style="list-style-type: none"> ➢ Stratification ➢ Pareto Diagram ➢ Cause and Effect Diagram ➢ Check Sheet ➢ Control Chart/Graph ➢ Histogram ➢ Scatter Diagram • QC techniques may include: <ul style="list-style-type: none"> ➢ Brain storming ➢ Why analysis ➢ What if analysis ➢ 5W1H
Kaizen Elements	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Quality

	<ul style="list-style-type: none"> • Cost • Productivity • Delivery • Safety • Moral • Environment • Gender equality 		
5W1H	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Who: person in charge • Why: objective • What: item to be implemented • Where: location • When: time frame • How: method 		
4M1E	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Man • Machine • Method • Material and • Environment 		
Creative idea generation	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Brainstorming • Exploring and examining ideas in varied ways • Elaborating and extrapolating • Conceptualizing 		
Medium KPT	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • 5S • 4M (machine, method, material and man) • 4P (Policy, procedures, People and Plant) • PDCA cycle • Basics of IE tools and techniques 		
Tangible and intangible results	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Tangible result may include: <ul style="list-style-type: none"> ➢ Quantifiable data • Intangible result may include: <ul style="list-style-type: none"> ➢ Qualitative data 		
Various types of diagram	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • Line graph • Bar graph • Pie-chart • Scatter diagram • Affinity diagram 		
Standard Operating Procedures (SOPs)	<p>may include but not limited to:</p> <ul style="list-style-type: none"> • The customer demand • The most efficient work routine (steps) • The cycle times required to complete work elements • All process quality checks required to minimize 		
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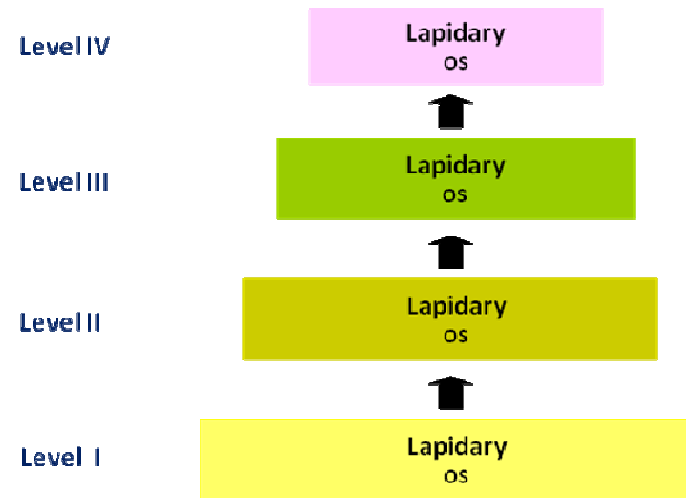
	defects/errors <ul style="list-style-type: none"> • The exact amount of work in process required
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Evidence Guide

Critical Aspects of Assessment	Demonstrates skills and knowledge competencies to: <ul style="list-style-type: none"> • Apply all relevant procedures and regulatory requirements to ensure quality and productivity of an organization. • Detect non-conforming products/services in the work area • Apply effective problem solving approaches/strategies. • Implement and monitor improved practices and procedures • Apply statistical quality control tools and techniques.
Underpinning Knowledge and Attitude	Demonstrates knowledge of: <ul style="list-style-type: none"> • QC story/PDCA cycle/ • QC story/ Problem solving steps • QCC techniques • 7 QC tools • Basic IE tools and techniques. • SOP • Quality requirements associated with the individual's job function and/or work area • Workplace procedures associated with the candidate's regular technical duties • Relevant health, safety and environment requirements • organizational structure of the enterprise • Lines of communication • Methods of making/recommending improvements. • Reporting procedures
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> • Apply problem solving techniques and tools • Apply statistical analysis tools • Apply Visual Management Board/Kaizen Board. • Detect non-conforming products or services in the work area • Document and report information about quality, productivity and other kaizen elements. • Contribute effectively within a team to recognize and recommend improvements in quality, productivity and other kaizen elements. • Implement and monitor improved practices and procedures. • Organize and prioritize activities and items. • Read and interpret documents describing procedures • Record activities and results against templates and other prescribed formats.

Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

LAPIDARY



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We wish to extend thanks and appreciation to the many representatives of business, industry, academe and government agencies who donated their time and expertise to the development of this occupational standard.

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This occupational standard was developed in January 2014 at Addis Ababa, Ethiopia.

COMMENT TEMPLATE

The Federal TVET Agency values your feedback of the document.
If you would like someone to personally contact you, please provide the following information:
Name:
Region:
Phone number:
Email:
Contact preference: <input type="checkbox"/> Phone <input type="checkbox"/> E-mail
Please, leave a comment.

Thank you for your time and consideration to complete this. For additional comments, please contact us on:

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