

Programme Module

Working with Wood

leading to

Level 3 QQI Component: Woodwork 3N0589

Please note the following prior to using this programme module descriptor:

- This programme module can be delivered as a stand alone module or as part of the:
 - 1. Level 3 QQI Certificate in General Learning 3M0874
 - 2. Level 3 QQI Certificate in Employability Skills 3M0935
 - 3. Level 3 QQI Certificate in Information and Communication Technologies 3M0877.
- Upon successful completion of this programme module the learner will achieve 10 credits towards the CDETB Level 3 QQI Certificates in General Learning, Employability Skills or Information and Communication Technologies.
- The learner needs to accumulate a minimum of 60 credits in order to achieve the Level 3 QQI Certificates in General Learning, Employability Skills or Information and Communication Technologies.
- Teachers/tutors should familiarise themselves with the information contained in City of CDETB's
 programme descriptor for Everyday Living Skills, Skills for the Workplace or Introduction to Information
 and Communication Technologies prior to delivering this programme module.
- In delivering this programme module teachers/tutors will deliver class content in line with the Guidelines for Teaching and Learning included in this programme module.
- In assessing the learner, teachers/tutors will assess according to the information included in this programme module. Teachers /tutors will devise Assessment Brief/s for the Collection of Work and Skills Demonstrations.
- Where overlap is identified between the content of this programme module and one or more other programme module(s), teachers/tutors are encouraged to integrate the delivery of this content.
- Where there is an opportunity to facilitate the learner to produce one piece of assessment evidence which demonstrates the learning outcomes from more than one programme module, teachers/tutors are encouraged to integrate assessment.
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Overview of the Programme Module

The Programme Module is structured as follows:

Section 1 to 8: contains important information for the teacher/tutor about the credit value, title, code, etc. of the programme module.

Section 9: details the learning outcomes prescribed for the programme module by QQI. These outcomes are set by QQI and cannot be changed in any way by the CDETB or individual teachers/tutors.

Section 10: outlines suggestions and guidelines for teaching the module. It contains useful information and ideas for teachers/tutors and can be helpful in clarifying learning outcomes.

Section 11: contains the relevant information in relation to the assessment of the module. As the teacher/tutor is the assessor of the work, this section is essential reading.

Section 11a specifically prescribes the way in which learners are required to present evidence for assessment.

Learner Marking Sheet: this is the marking sheet that must be attached to the assessment portfolio and signed by the teacher/tutor and the learner.

Programme Module	Award
1. Title of Programme Module	2. Component Name and Code
Working with Wood	Level 3 Woodwork 3N0589
3. Duration in Hours of Programme Module	4. Credit Value
100	10
5. Assessment Technique	6. Special Requirements
Collection of Work 20%	None
Skills Demonstration 80%	

7. Aims of the Programme Module

This programme module aims to provide the learner with the opportunity to make artefacts from wood and in doing so to use many different woodworking tools and processes.

8. Objectives:

- to interpret drawings and sketches and translate the information contained in them into a completed artefact made from wood
- to choose the appropriate tool or material to use for measuring the wood, marking it out, cutting it and joining it
- to apply appropriate safety procedures when working with wood and using hand, cordless and power tools
- to facilitate the learner to acquire an appreciation of the character and features of wood through completing a number of simple artefacts
- to apply simple mathematical problem solving processes to estimate the quantity of materials required and to produce a cutting list.

9. Learning Outcomes of Level 3 Woodwork 3N0589

The learner will be able to:

- 1. select the materials, power tools, hand tools, and equipment required to complete a range of woodwork exercises
- 2. list the safety mechanisms for a limited range of power tools
- 3. maintain tools and equipment correctly
- 4. use correct language and terminology to describe tools, equipment, and processes
- 5. follow drawings, sketches, templates, instructions and other aids to mark out, measure and prepare cutting lists and work pieces, using appropriate marking and measuring tools
- 6. use a range of electrical, cordless and hand tools to include an awl, marking gauge, vice clamp, planes, chisels, drills, routers, saws and sanders
- 7. follow manufacturer's instructions when changing saw blades, belts, guides and bit blades
- 8. cut wood to given specification using the correct saw type and blade size
- 9. estimate quantity of materials required to complete a specific project in wood
- 10. complete projects using a variety of methods including adhesives, glue, nails, screws, dowels and pins
- 11. apply appropriate health, safety and personal hygiene procedures when using materials, power tools, and hand tools.

Delivery Strategies and Learning Activities

The programme module could be delivered through classroom-based learning activities, team work, group discussions, one-to-one tutorials, field trips, case studies, role play and other relevant activities. There are practical elements to this module requiring access to a range of materials, resources and equipment and the learner should be allocated adequate time and facilities to complete each task. All practical activities should exemplify safe working practices and reinforce standard health, safety and environmental concerns.

1. Guidelines for Teaching and Learning

Please note: the following guidelines suggest a sequence for the teaching of this module. In some cases, this may differ from the sequence of learning outcomes outlined in section 9.

Making artefacts from wood

Facilitate the learner to make a number of artefacts of personal interest from wood. In producing these artefacts the learner will have an opportunity to do the following:

- select the correct materials, power tools, hand tools, and equipment required to complete a range of woodwork exercises
- work safely in the woodwork room
- read drawings or sketches
- measure and mark out the wood
- process the wood, including joining the different components of the artefact together
- complete the artefact using a variety of methods including adhesives, glue, nails, screws, dowels and pins
- use hand, cordless and power tools.

At this level the following types of artefacts may be appropriate for a learner to complete:

- a spice rack
- a clock
- a child's toy
- a jewellery or money box
- a mirror frame
- a small stool
- a small table
- a bird house
- a letter rack
- a CD rack
- a plaque
- a tray
- other artefacts of personal interest to the learner and in line with the standard of Level 3 Woodwork 3N0589.

Working Safely in the Woodwork Room

- Consider with the learner what procedures should be followed to ensure the working environment in the woodwork room is safe, for example,
 - Bags should always be placed out of the way so they are not obstructing walkways or presenting a
 potential hazard for those walking around the room
 - Long hair should always be tied back so it does not obstruct the eyes or get tangled in any moving parts of tools
 - Ties should always be tucked in or removed so they do not get tangled in any moving parts of tools
 - o Appropriate footwear should be worn at all times to protect feet from falling objects
 - Correct personal protection equipment should be worn, as appropriate, for example, goggles, dusk mask and ear muffs
 - The workspace should always be kept tidy and tools returned to their storage area once the task at hand is complete
 - Tools and materials should never be left sticking out over the work bench or left lying on the floor as they could cause someone to trip
 - o The vice should always be closed when not in use
 - No running in the wood work room
 - All safety notices in the room should be followed
 - o The instructions of the woodwork Teacher/Tutor should be followed at all times
 - o Explore the different steps that can be taken to ensure the woodwork room is a healthy place to be

working, for example,

- A dust extraction system should be used to remove the dust from the working environment
- The room should be well ventilated, particularly when glue, paint or varnish is being applied to the wood
- The room should have adequate light so that those working in the room can see what they are doing
- Discuss with the learner what personal hygiene procedures should be followed when working with wood and woodworking tools, for example,
 - Hands should always be washed before handling tools and after handling wood, glue, paint or varnish
 - No food or drink should be consumed in the woodwork room
 - Where available protective clothing should be worn in the woodwork room to protect clothes from dirt and dust
- Consider the health and safety considerations to be taken into account specifically when using both hand and power tools, for example,

Hand Tools

- Use the hand tools in the same way as the Teacher/Tutor demonstrated
- Always use the correct tool for the job
- Only use tools that the learner is comfortable and confident using
- Maintain hand tools correctly so that they are fit for purpose
- Do not walk around the woodwork room with tools
- Always push the cutting edge of a tool away from the body, for example, when chiselling out a trench
- Ensure that the wood is held tightly in a vice or clamp when being processed
- Always return the tools to their storage area when finished using them

Power Tools

- Use the power tools in the same way as the Teacher/Tutor demonstrated and only under the supervision of the Teacher/Tutor
- Only use tools that the learner is comfortable and confident using
- Always adhere to the manufacturer's safety guidelines
- Ensure that the cord of the tool is behind where the learner is working and is out of the way of others working in the room
- Maintain the tools correctly and in line with Manufacturers recommendations
- Ensure that the wood is held tightly in a vice or clamp
- Unplug the tool when changing a blade, a bit or the sandpaper, as appropriate
- Always return the tools to their storage area when finished using them
- o Facilitate the learner to put the above health, safety and personal hygiene procedures into practice when working in the woodwork room
- Review with the learner the more commonly used power tools used in the woodwork and list the safety mechanisms to be considered when using the following tools:
 - o The Jigsaw:
 - wear eye protection
 - keep fingers away from the blade
 - unplug the jig saw when changing the blade
 - ensure the power cable is always behind and away from the cutting blade
 - support the piece of wood being cut correctly in a vice or clamp
 - ensure the base plate of the jig saw is firmly on the wood before turning on the saw.
 - o The router:
 - wear eye and ear protection
 - ensure there is a firm grip on the router when it is being used
 - concentrate on the job in hand and do not get distracted by what else is going on in the woodwork room
 - if using a plunge router ensure the piece of wood is properly secured in a vice or clamp
 - always unplug the router when adjusting the bit or depth of cut
 - work from left to right
 - ensure the router bit is properly installed in the machine

- allow the router to stop spinning before putting it down out of your hands.
- The sander: belt sander, orbital sander or bench sander:
 - wear a dust mask
 - ensure the room is well ventilated
 - always unplug the sander when changing the sandpaper belt, pad or disc
 - empty the dust bag frequently
 - ensure there are no screws or nails protruding from the wood being sanded
 - take regular breaks from using the sander
 - ensure the piece of wood being sanded is properly secured using a vice or clamp.

Reading Drawings or Sketches

- Using 3D sketches and/or orthographic/isometric drawings provided by the Teacher/Tutor, explore with the learner the features of a given artefact, for example,
 - The function of the artefact
 - The size of the artefact dimensions should be in millimeters
 - The type of wood used in producing the artefact, for example, hardwood, softwood, mdf, plywood
 - The other materials used in producing the artefact, for example, nails, screws, adhesive, hinges, locks, latches
 - The different components making up the artefact, for example, front, back, left side, right side and base for a box
 - The use of joints to join two pieces of wood together, for example, housing joint, mortise and tenon joint, bridle joint, finger joint, dowel joint
 - The embellishment of the wood to make it aesthetically pleasing, for example, a curve on one of edges, pyrography to draw a picture on the wood, veneers, chamfers
- Review with the learner the dimensions of each piece of wood making up the artefact and record these in a structured cutting list, for example:

- Facilitate the learner to calculate the amount of wood and other materials such as glue, nails, dowels or screws needed to complete the artefact
- Explore with the learner the various dimensions that will be needed to properly mark out the pieces
 making up the artefact and sketch further drawings to tease out specific details relating to the artefact, for
 example, how two pieces of wood are joined
- Review with the learner the material to be used to make the artefact and the reason why that material is suitable, for example,
 - Softwood less expensive than hardwood, easily cut, chiselled and planed, can be lighter than a hardwood
 - o Hardwood very attractive in appearance, strong, can withstand the wear and tear of use over time,
 - MDF no knots so it's easily drilled, cut and painted, won't split or warp, inexpensive, available in a number of surface finishes
 - Plywood very strong, very durable, exterior plywood can be used outdoors, won't split, inexpensive

Measure and mark out the wood

- Identify with the learner the tools that will be needed for marking out the wood, for example, a try-square, a sliding bevel, a steel rule, a marking gauge, a mortise gauge, an awl, a sharp pencil
- Facilitate the learner to mark out each component of the artefact, to include:
 - o using the appropriate marking out tool for the correct situation
 - o marking the face side and face edge
 - o measuring out each piece to the required length and marking the waste wood
 - o using the try-square in an appropriate manner to draw lines perpendicular to the face side and face edge
 - o marking out the location of embellishments, joints, holes to be drilled or angled saw cuts using a trysquare, gauge, sliding bevel or awl, as appropriate

o identifying any wood that is to be removed.

Process the wood, including joining the different components of the artefact together

In making the artefacts, learners should be given the opportunity to practice and incorporate into their work a minimum of four different joints from the following list:

- finger joints
- o mortise and tenon joint
- housing joint
- o bridle joint
- o dovetail joint
- o halving joint
- o dowel joint.
- Demonstrate for the learner the different methods required to process each component of the artefact, for example, the process for:
 - o sawing across the grain to a required depth, for example, if making a housing joint
 - o sawing with the grain to a required depth, for example, if making a tenon for a mortise and tenon joint
 - o sawing through the wood, for example, to remove waste wood
 - o chiselling out a trench, for example, if making a housing joint or bridle joint
 - o chiselling out a mortise, for example, if making a mortise and tenon joint
 - o cutting out shapes or curves, for example, for a plaque or a clock face using vertical paring or a coping saw or jig saw
 - o planning a chamfer
 - o boring holes, for example, for screws or dowels
 - o moulding the edge of a component.
- Consider with the learner the best tool and equipment to do the job for the above processes, for example,

Process

- Sawing across the grain to a required depth
- Sawing with the grain to the required depth
- Sawing through the wood
- Chiselling out a trench
- Chiselling out a mortise
- Cutting out shapes or curves
- · Planing a chamfer
- Boring holes
- Moulding the edge of a component

Tool

- A tenon saw and a bench hook
- A dovetail saw or tenon saw, depending on depth and a vice
- A tenon saw and a bench hook
- A chisel
- A mortise chisel and a mallet and a clamp or vice
- A coping saw or jig saw and a clamp or vice or a chisel for vertical paring
- A smoothing plane or a block plane and a vice
- A brace and bit or a cordless drill and a vice
- A router and a vice or clamp and safety equipment
- Facilitate the learner to work on each component making up the artefact to include demonstrating the following:

Hand Tools

- Selecting the correct tool for the task in hand
- Using a variety of hand tools, to include:
 - a tenon saw
 - a coping saw
 - a marking gauge
 - a try-square
 - a ruler
 - a sliding bevel

- a plane
- a chisel
- a mallet
- other tools appropriate to the task.
- Maintaining the tools correctly in order to ensure that they are fit for purpose, for example, changing a broken blade in the coping saw, retracting the iron or blade of the plane before storing the plane
- Referring correctly to the hand tool being used
- o Explaining, using appropriate language and terminology, the process being executed

Power Tools

- Selecting the correct power tool for the task in hand
- Using power tools, as appropriate, to include, a router to mould the edge of a component, a jig saw to cut out a large shape or curve, a sander to smooth the wood
- Maintaining the power tools correctly, for example:
 - replacing a broken or damaged blade in the jig saw
 - replacing any parts in the router that are worn or damaged
 - always removing the dust or wood chips away from the router or sander once finished using it
 - storing the power tools in a clean, dry place, free from moisture
- Adhering to the manufacturer's and the Teacher's/Tutor's instructions on how to safely use the power tools and change saw blades, belts, guides and bit blades, as appropriate
- o Demonstrating an ability to correctly refer to the hand tool being used
- Explaining, using appropriate language and terminology, the process being executed

Cordless Tools

- Using a cordless drill in the correct manner, for example, to drill a pilot hole for a nail or screw or to drive a screw
- o Demonstrating an ability to correctly refer to the hand tool being used
- Explaining, using appropriate language and terminology, the process being executed

Complete the artefacts using a variety of methods

- Explore with the learner the different methods available to secure the components making up the artefact, to include:
 - o adhesives
 - o nails
 - o screws
 - o dowels
 - o pins.
- Review with the learner each method to decide which method is appropriate for different scenarios, for example,
 - Adhesives:
 - for securing the different parts of a joint together to provide stability
 - to stick a veneer onto another piece of wood
 - to provide added strength to nails, pins or dowels, as appropriate.
 - o Nails:
 - to stabilise a mitred or butt joint at the corner of something like a mirror frame
 - to secure pieces of wood together that are not jointed, for example, when working with MDF, plywood or chipboard
 - to fasten a non wood material to wood, for example, in upholstery.
 - o Screws:
 - to attach hinges, locks, hardware or other fixtures and fittings to the wood
 - to attach two pieces of wood together
 - to join plastic to wood.
 - Dowels
 - to join two pieces of wood together, for example, in a dowel joint
 - to form an axle or a feature in a toy

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- to attach a horizontal shelf to a vertical support
- to disguise where a screw has been used and countersunk below the surface.
- Pins such as panel pins:
 - to secure a thin base made from MDF to a frame for something like a jewellery box or tray
 - to pin a small moulding in place.

Specific Information Relating to the Assessment Techniques

The assessor (teacher/tutor) is required to devise Assessment Briefs for the Collection of Work and the Skills Demonstration. In devising the Assessment Briefs, care should be taken to ensure that the learner is given the opportunity to show evidence of ALL learning outcomes. Each learner is required to work alone in completing the Collection of Work. There is no facility for this Collection of Work to be completed as a group.

Evidence that the learner has achieved the learning outcomes may take a variety of forms including tutor verification of the learner's contribution, learner's worksheet, diagrams, cloze tests, multiple choice statements, visual presentation or another appropriate evidence in the form of written, oral, graphic, audio, visual or any combination of these. Any audio or visual evidence must be provided in a suitable format. All of the evidence must be retained n the learner's assessment portfolio.

Skills Demonstration

80%

The learner will complete one or more Skills Demonstrations at appropriate intervals during the course of the programme module. Evidence of the Skills Demonstrations must be included in the assessment portfolio. The evidence may be photographs, video, audio or digital evidence, or other appropriate evidence of the learner completing the tasks.

In completing the Skills Demonstrations, the learner will demonstrate the appropriate application of health, safety and personal hygiene procedures at all times when working in the woodwork room and when using materials, power tools, cordless tools and hand tools.

The learner will produce a minimum of two artefacts based on the sketches and/or drawings provided by the assessor. In making these artefacts the learner will demonstrate the following:

- identifying what:
 - o power tools
 - o cordless tools
 - o hand tools
 - equipment

will be required to produce the artefacts.

- Interpreting the drawings or sketches to identify the information needed to measure the components making up the artefacts and mark them appropriately
- Using appropriate marking out tools and measuring tools
- Cutting the wood to the required lengths and specifications, using the correct saw type and blade size. In cutting the wood the learner should demonstrate the ability to:
 - saw through the piece of wood
 - cut to a required depth
 - saw with the grain and/or against the grain
 - use a minimum of three of the following saws appropriately, a tenon saw, a dovetail saw, a coping saw, a jig saw, other saw.
- Using a range of electrical tools, to include:
 - o a router
 - o a jig saw
 - o a sander.
- Using a range of hand tools, to include:

- o an awl
- o a marking gauge and/or mortise gauge
- a vice
- o a clamp
- o a plane
- o a chisel.
- Using a cordless drill
- Stabilising the artefacts by using the following, as appropriate:
 - adhesive
 - o nails
 - screws
 - dowels
 - o pins.
- Following the manufacturer's instructions when changing saw blades, sanding belts, router bits and guides, as appropriate.

In processing the artefact, the learner should demonstrate the ability to use correct language and terminology to describe the tools and equipment being used and the processes being followed, at all times.

The learner should also demonstrate the capacity to maintain tools and equipment correctly and to properly treat the tools and equipment when in use.

Evidence of this skills demonstration must include the completed artefacts, and additional support evidence must be included in the assessment portfolio.

Collection of Work

20%

The Collection of Work may be produced throughout the duration of this programme module. It must be clearly indicated where evidence covers more than one learning outcome.

The learner will compile a Collection of Work to include evidence that demonstrates the following:

- Estimating the quantity of materials required to complete 2 specific projects in wood. These projects may be the artefacts that the learner is making for their Skills demonstration. The learner should demonstrate the ability to look at the sketches and/or drawings provided by the assessor and:
 - o Identify the different materials used in producing each artefact
 - Estimate the quantity of each material needed to complete each artefact
 - Prepare a cutting list to include the number, length, width and thickness of all the components making up the artefacts
- Listing the safety mechanisms to be implemented when using the following power tools:
 - o the router
 - the jig saw
 - o the sander.

Assessment - General Information - Woodwork 3N0589

All instructions for the learner must be clearly outlined in an Assessment Brief.

	Mapping Each Learning Outcome to an Assessment Technique				
Learning Outcome		Assessment Technique			
1.	Select the materials, power tools, hand tools, and equipment required to complete a range of	Skills Demonstration			
	woodwork exercises	Collection of Work			
2.	List the safety mechanisms for a limited range of power tools	Collection of Work			
3.	Maintain tools and equipment correctly	Skills Demonstration			
4.	Use correct language and terminology to describe tools, equipment, and processes	Skills Demonstration			
5.	Follow drawings, sketches, templates, instructions and other aids to mark out, measure and prepare	Skills Demonstration			
	cutting lists and work pieces, using appropriate marking and measuring tools	Collection of Work			
6.	Use a range of electrical, cordless and hand tools to include an awl, marking gauge, vice clamp,	Skills Demonstration			
	planes, chisels, drills, routers, saws and sanders				
7.	Follow manufacturer's instructions when changing saw blades, belts, guides and bit blades	Skills Demonstration			
8.	Cut wood to given specification using the correct saw type and blade size	Skills Demonstration			
9.	Estimate quantity of materials required to complete a specific project in wood	Collection of Work			
10.	Complete projects using a variety of methods including adhesives, glue, nails, screws, dowels and pins	Skills Demonstration			
11.	Apply appropriate health, safety and personal hygiene procedures when using materials, power tools, and hand tools	Skills Demonstration			

Grading

At Level 3 a learner is graded as Successful or Referred.

Successful means that ALL the learning outcomes from the Component Specification have been demonstrated to an appropriate standard in the learner's portfolio of assessment.

Referred means that the portfolio of assessment needs further work by the learner before s/he can demonstrate the standard and achieve certification from QQI.

Learner's PPSN: _____

Woodwork 3N0589	The Learner Marking Sheet



Learner's Name: _____

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Learners will be able to:	Evidence of the following is included in the assessment	If present in	Please indicate where evidence is
	portfolio:	portfolio	to be found
1. select the materials, power tools, hand tools,	select the appropriate materials to make an artefact from		
and equipment required to complete a range of	wood		
woodwork exercises	select the appropriate power tools to make an artefact from		
	wood		
	select the appropriate hand tools to make an artefact from		
	wood		
	select the appropriate equipment to make an artefact from		
	wood		
2. list the safety mechanisms for a limited range	 list the safety mechanisms to be implemented when using: 		
of power tools	 The router 		
	The jig saw		
	 The sander 		
3. maintain tools and equipment correctly	maintain tools correctly when using them		
	maintain equipment correctly when using it		
4. use correct language and terminology to	use correct language and terminology when describing:		
describe tools, equipment, and processes	o Tools		
	o Equipment		
	o Processes		
5. follow drawings, sketches, templates,	interpret drawings and/or sketches to identify information		
instructions and other aids to mark out,	needed to make an artefact		
measure and prepare cutting lists and work	prepare cutting lists for each artefact		
pieces, using appropriate marking and	measure each component making up the artefact correctly		
measuring tools	mark out each component making up the artefact correctly		
	use appropriate measuring and marking out tools		
6. use a range of electrical, cordless and hand	use a range of electrical tools to include a router, a jig saw		
tools to include an awl, marking gauge, vice	and a sander		
clamp, planes, chisels, drills, routers, saws and	 use a range of hand tools to include an awl, a marking 		

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sanders	gauge, a vice clamp, a plane, a chisel and a saw use a cordless drill
7. follow manufacturer's instructions when changing saw blades, belts, guides and bit blades	follow the manufacturer's instructions when modifying and maintaining the electrical tools
8. cut wood to given specification using the correct saw type and blade size	 cut wood to the required specification use at least three of the following saws: Jig saw Coping saw Tenon saw Dovetail saw Other saw
9. estimate quantity of materials required to complete a specific project in wood	 estimate the quantity of wood needed to complete an artefact estimate the quantity of other materials needed to complete an artefact
10.complete projects using a variety of methods including adhesives, glue, nails, screws, dowels and pins	stabilise and finish the artefacts using adhesives, nails, screws, dowels and pins, where appropriate
12. apply appropriate health, safety and personal hygiene procedures when using materials, power tools, and hand tools.	 apply appropriate health procedures when using materials and tools apply appropriate safety procedures when using materials and tools apply appropriate hygiene procedures when using materials and tools.

Learner's Signature: _____ Date: _____ Date: _____

This is to state that the evidence presented in the attached portfolio is complete and is the work of the named learner.

External Authenticator's Signature: Date: