



## FURNITURE MANUFACTURER SPECIFICATION

### 1. Introduction

#### Apprenticeship objective

The Furniture manufacturer apprenticeship standard has been designed to ensure that a set of common core skills, knowledge and behaviours are developed whilst providing a wide range of skills appropriate to the different occupations in the industry. This apprenticeship standard provides an umbrella for the ten industry occupations allowing apprentices to develop within their chosen industry discipline. A summary of each pathway is provided below.

+	General Furniture Manufacturer	Furniture Manufacturers are skilled craftsmen/women who make pieces of furniture. They may work in a small, independent shops that produce custom furniture or in a factory that mass-produce pieces of furniture.
+	Bed Manufacturer	Bed Manufacturers work in factory environments where the ability to work to agreed targets in terms of output and quality standards is essential. They specialise in mattress or divan and headboard making.
+	Modern Upholsterer	Modern Upholsterers are skilled and methodical individuals capable of creating ergonomic and comfortable furniture using both traditional and modern techniques, materials and fabrics to produce aesthetically pleasing and fit for purpose consumer products.
+	Furniture Finisher	Furniture Finishers prepare and treat a wide range of timbers and man-made boards, using a range of techniques. Items to be finished could range from tables, chairs, lounge suites, cabinets, chests of drawers, kitchen units and shop fittings. They may also work on fitted items such as staircases, wall panels and doors, and on musical instruments like pianos.
+	Fitted Furniture Installer	Fitted Furniture Installers are responsible for preparing and installing furniture including kitchens, bedrooms, bathrooms and offices, shops, exhibitions and boat interiors. This is onsite at the customer's commercial or domestic premises.



+	Furniture Restorer	Furniture restorers are involved in the conservation and restoration of antique and modern furniture by using practical and scientific restoration techniques. To be a furniture restorer, you should have an interest in furniture history, a desire to fix things, practical skills, an eye for detail and good observational and co-ordination skills.
+	Modern Furniture Service Repairer	Modern Furniture Service Repairers fix a wide range of problems, including damage to furniture, upholstery, beds, mattresses, mechanisms and fittings. They visit customers' premises to inspect items, assess requirements and carry out repairs.
+	Foam Convertor and Upholstery Cushion Interior Manufacturer	Foam Convertor and Cushion Manufacturers produce cushioning products using a wide range of conversion equipment. This includes setting up, operating and maintaining processing and cutting equipment. This equipment can range from small manually operated machines to large automated CNC profiling and shaping equipment.
+	Wood Machinist	Furniture Wood Machinists produce components for furniture using a wide range of wood working machinery. This includes setting up, operating and maintaining wood working machines such as saws, planers, moulders, lathes, routers and CNC/NC machines. Wood Machinists will take raw materials and produce components to a given specification to be used in the manufacture of furniture.
+	Furniture CNC Specialist	Furniture CNC Specialists produce components for furniture using CNC machines. This includes setting up, operating and maintaining CNC machines and saws to cut, plane, shape and sand all types of wood and man-made wood components.

### Flexibility

Each apprentice will take the occupational route that is best suited to the business they work in. They will complete all the core requirements set out below and then the set number of requirements for the chosen route.

Each business, depending on size, market position and skills needs, will require a different combination of the optional requirements detailed within each occupational area. This apprenticeship is designed to allow the business and the apprentice to agree which of these options are most valuable to the apprentice and organisation.



## Requirements

The number of requirements is set for each occupational area as being the minimum needed to ensure competence and transferability, but any employer is free to train their apprentice in additional requirements outside of the apprenticeship and at their own cost.

## Level

The apprenticeship is set at Level 2.

## 2. Entry requirements

There are no formal entry requirements including qualifications for apprentices selecting this apprenticeship standard. Employers and training providers must ensure that apprentices have the potential and opportunity to achieve the apprenticeship standard successfully. Apprentices do not need any prior knowledge, skills or understanding before starting the apprenticeship.

## 3. Gateway

Apprentices must ensure they have met gateway requirements for this standard before booking end-point assessment. Apprentices are required to achieve the following mandated qualifications for this standard:

- + Level 1 English
- + Level 1 mathematics
- + Test results and/or certificates for Level 2 English and Level 2 mathematics.

Further details on the requirements for gateway can be found in the Gateway Requirements Policy. Evidence of these qualifications must be submitted to Achieve+Partners.

## 4. Duration

Typically, this apprenticeship will take 24 months to complete.

## 5. Order of end-point assessment

The assessment methods can be delivered in any order.



## 6. Apprenticeship grading

The apprenticeship is graded fail, pass, distinction. Apprentices must achieve a minimum of a pass in each of the 3 components.

## 7. Re-sits

An apprentice can re-sit a component of their end-point assessment if they fail. In this instance the apprentice cannot be awarded an overall grade of distinction the final grade will be capped at pass. It is expected that a period of further learning will need to be undertaken if the apprentice has to re-sit any part of the end-point assessment. Achieve+Partners can make exemptions to this ruling should reasons for the fail are deemed to be outside the control of the apprentice.



## 8. End-Point Assessment (EPA) Methods

End-point assessment for this standard includes:

### Knowledge tests

What are the requirements?	<p>There are two knowledge tests.</p> <p>A 60-minute health and safety test and a 40-minute industry test.</p> <p>The two tests can be taken separately on different occasions or back to back.</p> <p>They can be taken in the workplace or at an assessment centre.</p> <p>Both tests are available online.</p> <p>The two test scores are combined to give an overall grade for this method.</p> <p>The health and safety test has 45 multiple-choice questions and the industry test has 30 multiple-choice questions.</p>
Here are the ways we can help	<p>We provide online mock tests to help prepare your apprentice for the knowledge test.</p> <p>We provide an online learning module that supports the preparation for the knowledge test.</p> <p>Our online testing platform provides a simple solution that supports apprentices undertake their test.</p> <p>We provide a bespoke online learning programme for apprentices that can support apprentices in the revision and preparation of the industry test.</p>

### Practical observation

What are the requirements?	<p>The observation takes place over a maximum 2-hour period.</p> <p>It can be carried out in the workplace or in a simulated furniture manufacturing environment.</p> <p>Apprentices must be observed by an independent assessor completing work activities in their normal workplace, in which they will demonstrate the knowledge, skills and behaviours assigned to this assessment method.</p>
Here are the ways we can help	<p>We provide a set of activities that need to be demonstrated during the observation that reflect the occupational route</p> <p>We have written pass and distinction criteria that specifies exactly what the apprentice needs to demonstrate</p> <p>We provide an online learning module that supports the preparation for the practical observation.</p> <p>We provide feedback against the grading criteria.</p>



Portfolio of evidence

<p>What are the requirements?</p>	<p>Apprentices are required to submit a portfolio of evidence.</p> <p>The portfolio will comprise a collection of the apprentices’ best evidence gathered during the programme of learning.</p> <p>The evidence must demonstrate apprentices have achieved the core skills, knowledge and behaviours of the apprenticeship standard, and the chosen minimum number of skills from their occupational route.</p>
<p>Here are the ways we can help</p>	<p>The portfolio is assessed at site before the observation</p> <p>We have written pass and distinction criteria that specifies exactly what evidence the apprentice needs to provide.</p> <p>We provide an online learning module that supports the construction of the portfolio.</p> <p>We provide feedback against the grading criteria.</p>



## 9. Requirements of the standard

Apprentices are required to demonstrate the core requirements of the standard. In addition, the apprentice must demonstrate the skills as defined within their chosen pathway. Each pathway has defined rules that must be adhered to. As summary of these are provided below.

Pathway	Rules of combination
General Furniture Manufacturer	A minimum of 6 skills and a minimum of 3 must be from Group A
Bed Manufacturer	A minimum of 4 skills and a minimum of 2 must be Group A
Modern Upholsterer	A minimum of 5 skills and a minimum of 2 must be from Group A
Furniture Finisher	All of the 5 skills listed in Group A
Fitted Furniture Installer	All 9 mandatory skills listed in Group A and a minimum of 2 skills from Group B (optional)
Furniture Restorer	All 8 mandatory skills and 1 of the optional skills
Modern Furniture Service Repairer	All 9 mandatory skills listed in Group A and a minimum of 2 skills from Group B (Optional)
Foam Convertor and Upholstery Cushion Interior Manufacturer	All 5 mandatory skills from Group A and a minimum of 4 from optional Group B
Wood Machinist	All 4 mandatory skills in Group A and a minimum of 4 from the optional Group B
Furniture CNC Specialist	All 5 mandatory skills as listed in Group A and a minimum of 3 from optional Group B



## 9.1 Furniture Manufacturer core requirements

Apprentices must demonstrate all of the knowledge, skills and behaviours listed in the core requirements.

Knowledge statements		Method
Industry	Knowledge and understanding of general background of the furniture industry.	KT
Organisation	Knowledge and understanding of the company you are working in. This includes understanding the manufacturing process and how you contribute and fit into it.	P
Materials	Knowledge and understanding of industry materials. Properties and characteristics of materials used within your organisation.	P
Customers	Knowledge and understanding of customer expectations. Who are the industry customers and what are their expectations in terms of packaging and delivery.	P
Quality Standards	Know the quality standards which apply to the products and how to check that these have been met. Read and interpret specifications, drawings, cutting lists and other relevant technical information used within your organisation.	P
Health, Safety & Environment	Knowledge and understanding of the relevant health, safety and environmental requirements and regulations. Understand sustainability within the industry.	KT
Skills statements		Method
Maintain Tools & Equipment	Perform regular autonomous maintenance tasks on machinery, tools and equipment used.	P
Problem Solving	Identify issues quickly, solve problems and apply appropriate solutions.	P
Achieve quality and output targets	Carry out work to required quality standards and output targets. High attention to detail, must monitor and check work meets specifications and must follow methodology and processes.	P
Health & Safety	Comply with health, safety and environmental requirements, relevant statutory regulations and industry standards/codes of practice at all times.	KT



Behaviour statements		Method
Collaboration & Adaptability	Willing to both listen and learn and to accept changing priorities and working requirements. Work effectively with others in a team whilst maintaining effective professional working.	P
Time management	Time management and ability to complete work to schedule.	P
Pride in the workplace	Organise workspace for efficiency and effectiveness by identifying and storing items used, maintaining work area and sustaining order.	P

## 9.2 Occupational area requirements

### Pathway 1: General Furniture Manufacturer

General Furniture Manufacturers must take a minimum of 6 of the following requirements and at least 3 must be from Group A.

Group A		Method
Machinery, Tools and Equipment	Set up and operate machinery, tools and equipment used to produce furniture. Understand tools and equipment used.	O/P
Components	Make components of furniture to specification within acceptable tolerances. Understand how and where components are used.	O/P
Cutting	Use appropriate equipment to cut materials within acceptable tolerances.	O/P
Joints	Understand the principles of joints used in making hand-crafted furniture.	P
Veneers and Laminates	Select, prepare and apply veneers to items of furniture.	O/P
Assembly	Assemble components of furniture. Understand the sequence of assembly and why this is important.	O/P
Finishing	Apply stains, sealers, basecoats and finishes to production furniture.	O/P



Group B		Method
Measure and Mark Out	Measure and mark out materials to specification.	P
Sanding	Sand materials for preparation prior to assembly, post-assembly and de-nibbing. Understand grit sizes and the process of sanding.	P
Cramping	Position components and apply cramps to ensure products are positioned securely to specification.	P
Fittings	Prepare and assemble components to specification, finishing and checking the assembly conforms to specifications.	P
Gluing	Apply adhesives to components. Understand types, methods and processes involved in gluing.	P
Jigs and Templates	Use and maintain jigs and templates for furniture production. Jigs are used to ensure repeatability and accuracy in the production of furniture. These can be hand-held or mounted on workbenches.	P
Edge Banding	Carry out edge-banding process following standard operating procedures. Edge banding is the process of applying a trim or edge to the piece of furniture to make it neat and aesthetically pleasing.	P
Electrical/ Mechanical Fittings	Fit mechanical or electrical components to furniture.	P
Rectification/Re work	Carry out rectification or rework. This includes assessing and repairing items.	P
Safe Handling and Storage	Pack and store products and components following standard operating procedures. Understand and follow procedures for safe handling of products.	P



## Pathway 2: Bed Manufacturers

Bed Manufacturers have the option to further specialise in Mattress Making or Divan and Headboard Making. Apprentices must take a minimum of 4 skills from either Mattress Making or Divan and Headboard Making and at minimum of 2 must be Group A.

### Mattress Making

Group A		Method
Spring Making	Prepare work area, set up machine for appropriate spring type and size and produce springs to the required specification.	O/P
Quilting	Prepare for and carry out mattress quilting operations. Understand and operate quilting machines.	O/P
Tape Edging	Prepare work area, set up machinery, select materials and carry out tape edging. Tape edging is usually the final process in mattress making. It involves closing the mattress up by the application of a tape using a sewing machine.	O/P
Hand Side Stitching	Identify and sort components and sew materials to specification.	O/P
Group B		
Panel Cutting	Prepare and cut fabric and components used for panels. Understand and use any machinery used in this process.	P
Sewing Borders /Labels	Identify and sort components. Sew materials to specification.	P
Mattress Assembly	Assemble mattresses using appropriate components such as spring units and fillings to agreed standards. This will involve the use of equipment such as a glue spray and staple guns.	P
Tufting	Tuft mattresses to appropriate pattern and standard.	P




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 Divan and Headboard Making
 

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Group A		Method
Sewing	Produce sewn / seamed components by hand and through the use of machinery.	O/P
Headboard Upholstery	Upholster headboards including pleats, deep buttoning, ruching and fluting.	O/P
Upholstery	Prepare, cut and apply upholstery materials, trim and finish divans.	O/P
CNC Routing	Prepare, set up, operate and maintain computer numerically controlled (CNC) machinery to produce shaped headboards.	O/P
Group B		
Wood Machining	Prepare, set up, operate and maintain machinery to produce wood components.	P
Laying and Cutting Fabrics	Prepare and cut fabric and components.	P
Frame Making	Prepare and assemble frames using jigs.	P
Drawer Making	Upholster drawer fronts, prepare and assemble drawers.	P
Ottoman / Adjustable Bed Frames	Produce ottoman or adjustable beds ensuring the mechanisms are correctly attached and in working order.	P



### Pathway 3: Modern Upholsterer

Modern Upholsterers must take a minimum of 5 skills and a minimum of 2 must be from Group A.

#### Group A

#### Method

Cut Fabrics and Components	Prepare and cut fabric and components used in upholstery.	O/P
Frame Construction	Construct upholstery frames to specification. Understanding the methods used to construct frames.	O/P
Sewn / Seamed Components	Produce sewn / seamed components by hand and through the use of machinery.	O/P
Suspensions and Foundations	Select materials for suspensions including springs, pocket springs, sprung units and webbing. Apply these to frames using appropriate modern or traditional methods, tools and equipment.	O/P
Upholstering	Measure and cut fabric, fit, apply and finish top covers including fluting, pleating and buttoning.	O/P
Loose Covers	Cut, sew and fit loose covers to specification.	O/P
Repair	Repair joints and frame ready for re-upholstery and revive and polish show-wood frame.	O/P

#### Group B

Jigs and Templates	Use and maintain jigs and templates. Jigs are used to ensure repeatability and accuracy in the production of furniture. These can be hand-held or mounted on workbenches.	P
Produce Templates	Determine details of templates from specifications, mark out, measure dimensions and cut templates using appropriate tools and equipment.	P
Resolve Faults in Leather	Deal with scuffs, scratches, stains, burn marks, water marks and discolouration in leather.	P
Filling Materials	Select and fix filling materials. Understand different types and fixing methods.	P
Fit Mechanical or Electrical Components	Assemble, fit and quality assure components.	P
Cushions and Padded Items	Measure and cut fabric; sew components to produce scatter, box and bolster cushions.	P
Frame Finishes	Finish and polish show-wood frames, apply stains, sealers basecoats and finishes.	P



Group B		Method
Trimmings and Finishings	Position and fix trimmings and finishings. This includes castors, valances, borders, skirts, dust covers and feet and legs.	P
Strip Down Furniture	Strip back existing upholstery to frames. Understand when and how to retain original foundation work	P

#### Pathway 4: Furniture Finisher

Furniture Finishers must take all of the 5 skills listed in Group A.

Group A		Method
Requirements	Analyse and agree finishing requirements following organisational procedures. A customer can be internal or external to the organisation.	P
Prepare furniture for finishing	Prepare hand crafted or production furniture for finishing this will include sanding, grain brushing, repair, stripping and general surface preparation.	O/P
Finishing Applications	Apply stains, sealers, primers, oils, polishes, varnishes, waxes, lacquers and finishing coats to furniture. Finish furniture by spraying.	O/P
Colour Match	Identify and carry out basic colour matching to organisational standards.	O/P
Decorative & Specialist Effects	Create decorative effects or specialist finishes on furniture.	O/P



### Pathway 5: Fitted Furniture Installer

Fitted Furniture Installers must take all 9 mandatory skills listed in Group A and a minimum of 2 skills from Group B (Optional).

#### Group A (Mandatory)

#### Method

Transporting & Handling of Materials	Ensure the safe transportation and handling of installation equipment and materials. The correct type and quantity of installation equipment and materials have to be located and then transported so that they arrive at the location of the installation in good order.	P
Prepare Location	Prepare location for assembly and placement of furniture. This involves making the assembly and placement area ready for work and preparing the furniture components for assembly.	O/P
Measure and Mark Out	Measure and mark out materials to specification.	O/P
Power Tools & Hand Tools	Set up and operate tools used to assemble furniture. Understand the tools used within working area and which specific job they are used in.	O/P
Assembly	Assemble components of fitted furniture and understand the sequence of assembly and why this is important.	O/P
Installation	Install furniture on location to specification. This includes scribing, fixing and securing of furniture using correct fixings relating to foundation secured to etc., adaptations to non- standard situations to specification (i.e., pipe box, sockets, gas meter).	O/P
Re-instate Location	Re-instate a location after assembly and placement of furniture. This involves confirming the end of placement, ensuring all resources are cleared and maintaining customer liaison.	P
Customer Service	Develop customer relationships. This includes building customer confidence in the level of service provided, meeting the ongoing needs and expectations of customers and developing relationships between customers and your organisation.	P
Rectification/ rework	Carry out rectification or rework. This includes changing hinges and handles. Identify snags and awareness of where to seek help and guidance.	P



Group B (Optional)		Method
Gluing	Apply adhesives to components and understand types, methods and processes involved in gluing.	P
Cut Outs	Complete standard cut-outs in work surfaces for general appliances such as taps, hobs and sinks. This covers using a template, cutting out and finishing the area.	P
Cramping	Position components and apply cramps to ensure products are positioned securely to specification.	P
Sanding	Sand wooden work tops, trims, cornices and laminate edgings. Understand grit sizes and the process for sanding.	P
Veneers & Laminates	Apply edging tape to laminate worktops to specification.	P
Jigs & Templates	Use and maintain jigs and templates for furniture installation. Jigs for example hinges and templates for example sinks and work tops.	P
Joints	Cut and join components on site. This could include work top jointing, up-stand, cornices and trims.	P
Fittings	Prepare and assemble components to specification, finishing and checking the assembly conforms to specifications.	P
Electrical / Mechanical Fittings	First fit mechanical or electrical components to furniture.	P
Finish composite worktops	Finish work tops to specification following manufacturers' instructions.	P



## Pathway 6: Furniture Restorer

Furniture Restorers must take all 8 mandatory skills and 1 of the optional skills

### Group A (Mandatory)

### Method

Customer Service	Agree the requirements, scope of the work and the budget with the customer. Set expectations with the customer.	P
Assessment	Assess items of furniture for repair in order to produce a condition and options report.	P
Requirements	Evaluate and specify restoration requirements. Develop a plan for the restoration work.	P
Research	Carry out research to understand the history of furniture and the different periods.	P
Repair & Restore	Repair structural components. Replicate and restore components.	O/P
Basic Finishing	Prepare existing and newly restored surfaces and finish furniture using basic finishing methods.	O/P
Reporting	Write a report on the work that has been carried out to include sketches and photographs of the process.	P
Recommendations	Provide the customer with relevant aftercare and instructions and recommendations for future use and handling.	P

### Group B (Optional)

Decorative Effects	Re- create decorative effects on furniture.	P
Re-upholstery	Reupholster structural and decorative elements of furniture. Ensure you use appropriate fabrics.	P
French Polishing	French polish furniture using traditional methods to a glass finish.	P



### Pathway 7: Modern Furniture Service Repairer

Modern Furniture Service Repairers must take all 4 mandatory skills and 3 of the optional skills.

#### Group A (Mandatory)

#### Method

Assessment	Carry out an assessment of the fault. Assess and specify requirements for work to be carried out and agree with customers.	O/P
Customer Service	Develop customer relationships. This includes building customer confidence in the level of service provided, meeting the ongoing needs and expectations of customers and developing relationships between customers and your organisation.	P
Recommendations	Provide customers with relevant aftercare and instructions and recommendations for future use.	P
Report	Complete reports on the work carried out.	O/P

#### Group B (Optional)

#### Method

Upholstery	Repair upholstery faults including fabrics, frames, fillings, stitching, scratches, scuffs, tears, holes, seam issues, discolouration and colour loss, arms, collapsed surfaces and springs.	O/P
Furniture	Repair furniture faults including cosmetic, structural, veneers, foil and laminated surfaces.	O/P
Beds and mattresses	Repair beds and mattress faults including broken frames, replacing tufts, damaged stitching and mattress settlement.	O/P
Flat pack	Repair flat pack furniture faults including cosmetic and structural.	O/P
Mechanisms and fittings	Repair/replace mechanism and fittings faults including lifting mechanisms, recliners and electrical components.	O/P
Leather repairs	Repair scuffs, scratches, stains, burn marks, water marks and discolouration in leather.	O/P



### Pathway 8: Foam Convertor and Upholstery Cushion Interior Manufacturer

Foam Convertor and Upholstery Cushion Interior Manufacturers must take all 5 mandatory skills from Group A and a minimum of 4 from optional Group B.

#### Group A (Mandatory)

#### Method

Raw materials	Identify and explain characteristics of raw materials.	P
Product Specifications	Understand product specification instructions and diagrams.	P
Production Process & Flow Requirements	Prepare, arrange and coordinate material flow through identified workstations following required production route.	P
Rectification / Rework	Identify faulty products and undertake rectification process.	P
Safe Handling and Storage	Pack and label products in the required format according to customer specification.	P

#### Group B (Optional)

Lay Up, Measure & Mark Out	Operate manual and / or automatic fabric spreading equipment using safe systems of work.	O/P
Cut Shapes	Cut shapes using manual hand-held cutting equipment and / or CNC fabric cutter according to safe systems of work.	O/P
Prepare Cut Parts & Sew Components	Prepare cut components ready for sewing and sew by hand through use of sewing machinery.	O/P
Prepare Cases	Prepare cases in line with filling requirements.	O/P
Fill Cases	Fill cases through use of manual and / or automated filling methods.	O/P
Finishing	Close filling opening to required standards through use of closing machinery to prevent filling migration.	P
Operate CNC Machinery	Prepare, set up and operate foam CNC & profiling machinery using safe systems of work.	O/P
Operate Large Cutting Machinery	Prepare, set up and operate vertical and horizontal cutting machines using safe systems of work.	O/P
Operate Small Cutting Machinery	Operate small cutting and shaping machinery using templates and jigs to ensure repeatability and accuracy of component parts.	O/P
Prepare Components	Prepare all cut components along with required drawings ready for assembly.	O/P



Automated Fabrication	Operate automated fabrication line to required operating procedures.	O/P
Manual Fabrication	Assemble cut parts through correct use of sprayed adhesive equipment and assembly techniques to the required tolerances and quality standards.	O/P

**Pathway 9: Wood Machinist**

Wood Machinists must take all 4 mandatory skills in Group A and a minimum of 4 from the optional Group B.

**Group A (Mandatory)**

**Method**

Measure and Mark Out	Measure and mark out materials to specification within the acceptable tolerances following standard operating procedures.	O/P
Tooling	Select, prepare and maintain wood machining tooling.	O/P
Cutting	Prepare, set up and operate cutting wood machinery.	O/P
Planing	Prepare, set up and operate planes. This includes surface planer and thicknesser (can be a combined machine) and four-sided planer and moulder (for planed all round).	O/P

**Group B (Optional)**

**Method**

Calibrating	Calibrate measuring equipment, keep tools and equipment clear of debris and dirt and ensure tools are kept sharp.	P
Jigs and Templates	Use and maintain jigs and templates for furniture production. Jigs are used to ensure repeatability and accuracy in the production of furniture. These can be handheld or mounted on workbenches.	P
Profiling	Prepare, set up and operate profiling wood machinery. This includes vertical spindle moulder (straight work), four-sided planer and moulder, high-speed router, double-end tenoner, wood turning lathe, copying lathe, linear shaper, rotary shaper machines.	O/P
Boring	Prepare, set up and operate boring wood machinery. This includes single-head machine and multi-head machine.	O/P
Sanding	Sand materials for preparation prior to assembly, post-assembly and de-nibbing. Understand grit sizes and the process of sanding. This includes the use of wide belt sander, overhead narrow belt sander, disc sander, bobbin sander, finisher and profile sander.	P



Edge Banding	Carry out the edge-banding process following standard operating procedures. This includes, edge-banding by hand, colour matching, timber and PVC lippings, calibration and finishing techniques.	P
Operate Machinery and Equipment	Operate woodworking machinery and equipment to meet company requirements. Prepare tools and equipment including tooling technology and calibration of measuring equipment.	P
Joints	Prepare, set up and operate wood machinery to produce jointed wood and wood-based products. This includes chisel morticer, chain morticer, slot morticer, dovetailer, vertical spindle moulder, stair router, single-end tenoner, double-end tenoner, round-end tenoner, dowler and router.	P
Assembly	Assemble components of furniture following standard operating procedures. Understand the sequence of assembly and why this is important.	P

### Pathway 10: Furniture CNC Specialist

Furniture CNC Specialists must take all 5 mandatory skills as listed in Group A and a minimum of 3 from optional Group B.

#### Group A (Mandatory)

#### Method

Measure and Mark Out	Measure and mark out materials to specification within the acceptable tolerances following standard operating procedures.	O/P
Tooling	Select, prepare and maintain CNC/NC tooling.	O/P
Operate CNC/NC Machinery and Equipment	Operate CNC/NC machinery and equipment to meet company requirements. Prepare tools and equipment including tooling technology and calibration of measuring equipment.	O/P
CNC/NC Processing	Understand the principles of CNC/NC processing. This includes the capabilities of machinery used, how the machinery operates, principles of machinery and the manufacturing processes used in your organisation.	P
Mechatronics System Principles and Fault Finding	Understand mechatronics systems principles and fault finding. This includes diagnosing simple faults, understanding total production maintenance, engineered systems, and the basic principles of pneumatic, hydraulic, mechanical and electrical actuation systems.	P



Group B (Optional)		Method
Methods of Measurement	Inspect and use measuring equipment, keep tools and equipment clear of debris and dirt.	P
Jigs and Templates	Use and maintain jigs and templates for furniture production. Jigs are used to ensure repeatability and accuracy in the production of furniture. These can be handheld or mounted on workbenches.	P
Sanding	Sand materials for preparation prior to assembly, post-assembly and de-nibbing. Understand grit sizes and the process of sanding. This includes the use of wide belt sander, overhead narrow belt sander, disc sander, bobbin sander, finisher and profile sander.	P
Edge Banding	Carry out the edge-banding process following standard operating procedures. This includes colour matching, timber and PVC lippings, calibration and finishing techniques.	P
Planing	Prepare, set up and operate planes. This includes surface planer and thicknesser (can be a combined machine) and four-sided planer and moulder (for planed all round).	P
Joints	Prepare, set up and operate CNC/NC machinery to produce jointed wood and wood based products. This includes chisel morticer, chain morticer, slot morticer, dovetailer, vertical spindle moulder, stair router, single-end tenoner, double-end tenoner, round-end tenoner, dowler and router.	P
Assembly	Assemble components of furniture following standard operating procedures. Understand the sequence of assembly and why this is important.	P

### Key

KT	Knowledge test
O	Practical observation
P	Portfolio of Evidence