

# Industrial Technology Skills 2019 v1.0

Sample assessment instrument

November 2018

## Practical demonstration — Manufacturing products with composite materials

### Information for teachers

This sample has been compiled by the QCAA to help and support teachers in planning and developing assessment instruments for individual school settings.

Schools develop internal assessments for each Applied subject, based on the learning and assessment described in the approved study plan.

### Purpose of the practical demonstration

This technique assesses the practical application of a specific set of teacher-identified production skills and procedures. Responses are completed individually in a set timeframe.

Further information about the specifications for this assessment technique can be found in the Assessment techniques section of the Industrial Technology Skills syllabus.

### Assessment dimensions

This assessment instrument is used to determine student achievement in the following dimensions:

- Knowing and understanding
- Analysing and applying
- Producing and evaluating.

Not every objective from each dimension needs to be assessed.

<b>Subject</b>	Industrial Technology Skills
<b>Technique</b>	Practical demonstration — Manufacturing products with composite materials
<b>Unit number and module number and name</b>	<b>Unit: 4</b> <b>Module: 4. Manufacturing enterprise — Manufacturing products with composite materials</b>

<b>Conditions</b>	<b>Units 3–4</b>
<b>Practical demonstration</b>	Manufacture and apply finishes to a lazy Susan to given specifications
<b>Further information</b>	
<b>Duration (including class time)</b>	4 weeks
<b>Individual/group</b>	Individual
<b>Resources available</b>	Access to manufacturing space, tools and machines Detailed drawings and technical information provided by the teacher

### Context

As a class, we have been exploring the industrial technology skills needed in manufacturing industries. Welding and fabrication refers to the shaping, joining and repair of metal products and components using heat or electrical current. Different welding techniques and equipment are used, depending on the application and the type and size of metal. Furniture-making refers to making or repairing individual pieces of furniture. Associated processes include wood and composites machining, which uses a range of machinery to cut, shape and mould wood into functional forms to be used in furniture-making production processes. Furniture finishing refers to preparing surfaces and applying stains, coatings and finishes to furniture in manufacture or repair.

### Task

Individually, use timber and metal to manufacture and apply finishes to a lazy Susan from detailed drawings and technical information to safely and efficiently demonstrate fundamental production skills and procedures in

- welding and fabrication
- furniture-making
- furniture finishing.

### To complete this task:

Select, apply and demonstrate fundamental production skills to manufacture a timber and metal lazy Susan, including

- interpreting drawings and technical information
- measuring and marking out timber and metal materials to produce parts for the lazy Susan
- planning the production processes, considering any adaptations needed
- using jigs and templates for the production
- shaping and joining metal to produce parts for the lazy Susan
- cutting and shaping timber to produce parts for the lazy Susan
- selecting and applying finishes to suit the material and the product's intended use
- interpreting technical information, such as safety data sheets, to determine appropriate equipment and procedures for using a particular consumable
- cleaning and maintaining work areas to ensure a safe working environment.

<b>Checkpoints</b>
<input type="checkbox"/> Term [X] Week [X]/[Date]: Receive feedback on shaping of timber before applying finish
<input type="checkbox"/> Term [X] Week [X]/[Date]: Receive feedback on the timber product before fixing components together
<input type="checkbox"/> [Due date]: Submit completed lazy Susan
<b>Authentication strategies</b>
Your teacher will use ways to check that the work you are assessed on is your own work.
<ul style="list-style-type: none"> <li>• Discuss with your teacher or provide documentation of your progress, including photographs, at each checkpoint.</li> </ul>
<ul style="list-style-type: none"> <li>• Your teacher will observe you completing work in class.</li> </ul>
<ul style="list-style-type: none"> <li>• Take part in interviews or consultations with your teacher as you develop your practical demonstration.</li> </ul>
<ul style="list-style-type: none"> <li>• Submit the declaration of authenticity.</li> </ul>
<ul style="list-style-type: none"> <li>• Your results may be cross-marked by a teacher from another class.</li> </ul>

## Stimulus

Detailed drawings and technical information will be provided by the teacher, e.g.

- orthographic views of the lazy Susan
- isometric pictorials of the lazy Susan
- assembly drawings or exploded views of the lazy Susan
- technical information from industry-standard drawings and documents.

## Instrument-specific standards matrix

	Standard A	Standard B	Standard C	Standard D	Standard E
Knowing and understanding	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:
	<ul style="list-style-type: none"> <li>• consistent and proficient demonstration of fundamental production skills</li> <li>• informed and accurate interpretation of drawings and technical information.</li> </ul>	<ul style="list-style-type: none"> <li>• effective demonstration of fundamental production skills</li> <li>• effective interpretation of drawings and technical information.</li> </ul>	<ul style="list-style-type: none"> <li>• demonstration of fundamental production skills</li> <li>• interpretation of drawings and technical information.</li> </ul>	<ul style="list-style-type: none"> <li>• partial demonstration of aspects of fundamental production skills</li> <li>• statements about drawings and technical information.</li> </ul>	<ul style="list-style-type: none"> <li>• minimal demonstration of aspects of fundamental production skills</li> <li>• inconsistent statements about drawings and technical information.</li> </ul>
Analysing and applying	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:
	<ul style="list-style-type: none"> <li>• discerning selection and proficient application of production skills and procedures in manufacturing tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• relevant selection and purposeful application of production skills and procedures in manufacturing tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• selection and application of production skills and procedures in manufacturing tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• partial application of aspects of production skills and procedures in manufacturing tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• minimal application of aspects of some production skills and procedures in manufacturing tasks.</li> </ul>
Producing and evaluating	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:	The student work has the following characteristics:
	<ul style="list-style-type: none"> <li>• thorough planning and discerning adaptation of production processes</li> <li>• proficient creation of products that meet specifications.</li> </ul>	<ul style="list-style-type: none"> <li>• effective planning and adaptation of production processes</li> <li>• methodical creation of products that meet specifications with minor variations.</li> </ul>	<ul style="list-style-type: none"> <li>• planning and adaptation of production processes</li> <li>• creation of products from specifications.</li> </ul>	<ul style="list-style-type: none"> <li>• partial planning of production processes</li> <li>• creation of incomplete products with obvious variation from specifications.</li> </ul>	<ul style="list-style-type: none"> <li>• minimal planning of some production processes</li> <li>• creation of aspects of products.</li> </ul>