



Australian Government

Department of Education, Employment and Workplace Relations

LMFFDT5002A Apply resources sustainably

Revision Number: 1

LMFFDT5002A Apply resources sustainably

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to apply resources sustainably, ensuring that the impact of a design does not have significant impact on the environment and its precious resources.
------------------------	--

Application of the Unit

Application of the unit	This unit supports the attainment of skills and knowledge required for competent workplace performance in furnishing operations of all sizes. Applying resources sustainably applies to an industry workplace or design studio environment and involves application of skills and knowledge at a para-professional level. These skills and knowledge are to be used within the scope of the individual's job and authority. This unit includes employability skills in planning and organising, problem solving and communication to access, interpret, apply and document information relating to sustainability.
--------------------------------	--

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess raw sources of material	1.1. Applicable OHS, legislative and organisational requirements relevant to applying resources sustainably are verified and complied with 1.2. Design brief is reviewed, confirmed and clarified with appropriate personnel 1.3. Communication with others is established and maintained in accordance with OHS requirements 1.4. Materials are assessed from their source taking account of where it derived from and its abundance 1.5. Materials are assessed for their ecological and environmental impact 1.6. Materials are assessed for their availability and sustainability
2. Assess the sustainability of a design	2.1. User needs and desires are assessed and documented 2.2. Material choice and use as stated in the specifications is audited and assessed 2.3. Product lifecycle analysis is evaluated 2.4. Intended manufacturing processes including assembly and finishing are assessed for their impact on the environment 2.5. Final documentation outlining the full analysis of the designs impact on the environment is compiled and produced as a report
3. Apply resources sustainably	3.1. Alternative solutions to a specified material are explored and reported 3.2. Recycled materials are considered and analysed as possible solutions to the material requirements for a design brief 3.3. Waste products are used in the production of models, maquettes and prototypes 3.4. Sustainable materials are detected and used in preference to materials in short supply 3.5. Thinner grades of material, veneers or man-made materials are evaluated as options for material use 3.6. Government legislation on resource sustainability is researched and adhered to

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level, required for this unit.

Required skills

- collect, organise and understand information related to work orders, basic plans and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems
- accurately recording and maintaining information relating to the furniture making and design functions
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity
- use pre-checking and inspection techniques to ensure the tools are serviceable and ready to use
- accurately recording and maintaining information relating to the design of products
- recognise and respond to circumstances outside instructions or personal competence
- efficiently and safely contribute to innovative design process
- plan and organise activities, including the preparation and layout of own worksite and the obtaining and use of tools and materials to avoid any backtracking, work flow interruptions or wastage
- use mathematical ideas and techniques to correctly complete measurements, calculate area and volume, and estimate other material requirements
- clarify and confirm work instructions
- plan own work within the given task parameters
- accept responsibility for given tasks
- set, monitor and satisfy personal work goals
- satisfy the competency requirements for the job
- learning of thinking, problem solving and conceptual techniques
- maintain current knowledge of tools and materials
- maintain current knowledge of furniture making and designing techniques
- seek learning opportunities
- use the workplace technology related to the use of tools, including calculators, measuring and recording devices.

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to applying resources sustainably
- organisational and site standards, requirements, policies and procedures for applying resources sustainably
- material sustainability

REQUIRED KNOWLEDGE AND SKILLS

- elements and principles of design
- ergonomics and aesthetic values
- types of tools and equipment and procedures for their safe use, operation and maintenance
- characteristics of materials, products, sources and defects
- forest management and sustainability
- resource utilisation
- waste and waste management
- computer programs
- product assembly techniques and equipment capabilities
- sketching and drawing
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement
- environmental protection requirements
- established communication channels and protocols
- problem identification and resolution.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the relevant Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Effectively apply resources sustainably in the design and development of products in accordance with the elements and principles of design
- Effectively measure the impact of design upon the environment
- Effectively produce a report on the impact study outcomes of a sustainable resources
- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for applying resources sustainably
- Communicate effectively and work safely with others in the work area

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to applying resources sustainably
 - specifications and work instructions

Method of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Furnishing Industry Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- Assessment may be applied under project related conditions

EVIDENCE GUIDE	
	(real or simulated) and require evidence of process • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances • Assessment may be in conjunction with assessment of other units of competency
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements	- are to be in accordance with Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures - requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination of hazardous materials and substances, manual handling including lifting and carrying
Legislative requirements	- are to be in accordance with applicable legislation from all levels of government that affect organisational operation - requirements may include but not be limited to award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, OHS, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice, duty of care and heritage
Organisational requirements	may include but not be limited to legal, organisational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OHS, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines)
Design brief	may include but not be limited to the aims, objectives, milestones for the design project, the point of reference for everyone, elements and principles of design and may include organisational or personal profiles, aims, target audience, budget, timeline, consultation requirements, colour requirements, image requirements and function
Appropriate personnel	may include but not be limited to trainers, supervisors, suppliers, clients, colleagues and managers
Communication	may include verbal and non-verbal language, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and cooperative language, use of language and concepts appropriate to individual social and cultural differences, control of tone of

RANGE STATEMENT	
	voice and body language
Material	may include but not be limited to native timber (native and imported), man-made timber products, plastic, metal, alloys, stones, glass, textiles, fibreglass, foam, cardboard, paper products or any other manipulable substance
Sources	may include but not be limited to the origin of the raw material including, the type and location wood was derived from, how and where it was processed, graph impact growth and available seasoning lead time, the mining source of metal or alloys and how these were processed, the formulas for the composition of plastics, the origin of textiles and how these were milled
Ecological and environmental impact	may include but not be limited to how the use of raw materials effects the ecology and environment and how its continued use will affect the area it has been sourced from, energy consumption in achieving the material, greenhouse gases created, waste levels, resource utilisation and transport effects. Similarly what impact will be felt by reducing or stopping material from the source
Sustainability	is to include the amount of resource widely available based on demand and its capacity to renew or be renewed
Documentation	may include but not be limited to working notes, hand written records, typed information and reports
Product lifecycle	is the evolution of a product from its raw source, through its inception, development, manufacture, completion and time as a completed product until potential renewal
Manufacturing process	may include but not be limited to the methods by which the product will be produced, these steps usually entail working from working drawings and specifications, producing components utilising machine operations, assembly of the components and finishing techniques
Assembly methods	may include but not be limited to nailing, gluing, screwing, welding, pressing, sewing, bonding, jointing or connecting various materials
Finishing	may include but not be limited to paints, waxes, lacquers, stains, pigments, oils and plastic coatings
Alternative solutions	may include but not be limited to the use of plantation timber in preference to old growth timber, metal alloys, recycled materials, composite stone and resins
Recycled materials	may include but not be limited to pre-used building supplies, materials previously used in product development, old stone, glass or textiles

RANGE STATEMENT	
Waste products	may include but not be limited to scrap materials, off-cuts, processing waste and discarded material
Sustainable materials	see alternative solutions
Man-made materials	may include but not be limited to medium density fibreboard, composite stone, alloys and resins

Unit Sector(s)

Unit sector	Furniture design and technology.
--------------------	----------------------------------

Competency field

Competency field	
-------------------------	--

Co-requisite units

Co-requisite units		