

CPCBC4004A Matrix Map

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ELEMENTS AND PERFORMANCE CRITERIA

Element	Performance Criteria	Task / Question Map
1. Read and interpret plans and specifications.	1.1. Appropriate plans and drawings are correctly identified.	Schedules: Q1 Q2 Q3 Q4 Q5 Working drawings: Q1 Q2 Q3 Calculating areas: Q1 Q2 Q3 Q4 Q5 CPCBC4004A Assessment Requirements: Q1 Q2
	1.2. Project plans and specifications are read and understood.	Schedules: Q2 Specifications: Q1 CPCBC4004A Assessment Requirements: Q1 Q2
	1.3. Levels, heights, gradients and other measurements are interpreted.	CPCBC4004A Assessment Requirements: Q1 Q2
	1.4. Measurements are made and quantities identified from plans and specifications that conform to standard industry practice.	Schedules: Q2 Specifications: Q1 Calculating areas: Q1 Q2 Q3 Q4 Q5 Dimensions & measurements: Q1 Q2 Q3 Q4 Q5 Q6 Bill of quantities: Q1 Q2 Q3 ACTIVITY: Calculating material quantities: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 CPCBC4004A Assessment Requirements: Q1 Q2
2. Identify and calculate labour costs.	2.1. Types and numbers of appropriate on-site personnel are identified and the time required on site is estimated.	Charge out hourly rates calculated: Q1 Q2 Q3 Award rates: Q3 CPCBC4004A Assessment Requirements: Q3 Q4

	2.2. Labour hours for non-contract elements of on-site work are calculated.	Specifications: Q4 Charge out hourly rates calculated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Time and personnel requirements estimated: Q1 Q2 Q3 CPCBC4004A - Benchmark Questions: Q3 CPCBC4004A Assessment Requirements: Q3 Q4
	2.3. Costs or rates for required on-site work are calculated.	Specifications: Q4 Charge out hourly rates calculated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Time and personnel requirements estimated: Q1 Q2 Q3 Prime costs: Q1 Q2 Q3 Q4 Environmental protection cost: Q1 Q2 Q3 Q4 CPCBC4004A - Benchmark Questions: Q3 CPCBC4004A Assessment Requirements: Q3 Q4
3. Identify and establish physical resource requirements.	3.1. Physical resource requirements are identified.	Environmental protection cost: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5 ACTIVITY: Calculating material quantities: Q10 CPCBC4004A Assessment Requirements: Q5 Q6
	3.2. Lists of materials are produced and quantities calculated.	Specifications: Q4 Bill of quantities: Q1 Q2 Q3 ACTIVITY: Calculating material quantities: Q10 PROJECT: Calculate Cost of Materials: Q2 CPCBC4004A - Benchmark Questions: Q1 CPCBC4004A Assessment Requirements: Q5 Q6
	3.3. Quantities are established against project or standard construction contracts.	Bill of quantities: Q1 Q2 Q3 ACTIVITY: Contract Requirements: Q1 CPCBC4004A - Benchmark Questions: Q1 CPCBC4004A Assessment Requirements: Q5 Q6
	3.4. Supplier prices for materials and consumables are obtained.	CPCBC4004A Assessment Requirements: Q5 Q6

	3.5. Plant or equipment requirements are identified and costed.	Environmental protection cost: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5 CPCBC4004A Assessment Requirements: Q5 Q6 Q7
4. Develop estimated project costs.	4.1. Appropriate labour rates and material costs are selected and applied.	Charge out hourly rates calculated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 CPCBC4004A - Benchmark Questions: Q3 CPCBC4004A Assessment Requirements: Q8 Q9
	4.2. Estimates of unit costs are determined and applied as appropriate.	Charge out hourly rates calculated: Q1 Q2 Q3 CPCBC4004A Assessment Requirements: Q8 Q9
	4.3. Costs to the project of WorkCover, Environmental Protection Agency (EPA) requirements, seeking approvals, waste management site fees and other statutory or additional costs are identified and applied.	Charge out hourly rates calculated: Q1 Q2 Q3 Environmental protection cost: Q1 Q2 Q3 Q4 ACTIVITY: Contract Requirements: Q1 CPCBC4004A Assessment Requirements: Q8 Q9
	4.4. Company overhead recovery and margins are applied.	Overhead costs: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5 CPCBC4004A - Benchmark Questions: Q2 CPCBC4004A Assessment Requirements: Q8 Q9
	4.5. Completed estimated project costs are calculated for inclusion in a tender or bill.	Prime costs: Q1 Q2 Q3 Q4 Overhead costs: Q1 Q2 ACTIVITY: Contract Requirements: Q1 CPCBC4004A Assessment Requirements: Q8 Q9

REQUIRED SKILLS

Required Skill	Task / Question Map
Required skills for this unit are: communication skills to:	
<i>enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand</i>	Specifications: Q5 Q6 CPCCB4004A Assessment Requirements: Q5 Q6
<i>read and interpret drawings and specifications</i>	Specifications: Q1 Q5 Working drawings: Q1 Q2 Q3 Calculating areas: Q1 Q2 Q3 Q4 Q5 ACTIVITY: Calculating material quantities: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 CPCCB4004A Assessment Requirements: Q1 Q2
<i>use language and concepts appropriate to cultural differences</i>	Specifications: Q5 Q6 CPCCB4004A Assessment Requirements: Q3 Q4
<i>use and interpret non-verbal communication</i>	Schedules: Q1 Q2 Q3 Q4 Q5 Specifications: Q5 CPCCB4004A Assessment Requirements: Q1 Q2
<i>contractual arrangement problem solving</i>	Specifications: Q6 Contracts: Q3 Q4 CPCCB4004A Assessment Requirements: Q6
<i>estimate labour and materials costs from written information</i>	Schedules: Q1 Q2 Q3 Q4 Q5 Specifications: Q5 Charge out hourly rates calculated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Time and personnel requirements estimated: Q1 Q2 Q3 Prime costs: Q1 Q2 Q3 Q4 CPCCB4004A - Benchmark Questions: Q1 Q2 Q3 CPCCB4004A Assessment Requirements: Q4 Q6

<p><i>numeracy skills to calculate labour hours and costs, material quantities and costs</i></p>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5 Time and personnel requirements estimated: Q1 Q2 Q3 ACTIVITY: Calculating material quantities: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 CPCBC4004A - Benchmark Questions: Q1 Q2 Q3 CPCBC4004A Assessment Requirements: Q3 Q4 Q5 Q6</p>
<p><i>use appropriate costing software programs.</i></p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 CPCBC4004A Assessment Requirements: Q4 Q9</p>

REQUIRED KNOWLEDGE

Required Knowledge	Task / Question Map
Required knowledge for this unit is: how to access and interpret:	
<i>national codes, including Building Code of Australia (BCA) and the Plumbing Code of Australia</i>	<i>Specifications: Q3</i>
<i>Australian standards relevant to the industry sector</i>	<i>Specifications: Q3</i>
<i>includes state or territory and local government building and construction codes, standards and government regulations relevant to the form of building or construction being undertaken (e.g. WorkCover and EPA)</i>	<i>Specifications: Q3 Environmental protection cost: Q1 Q2 Q3 Q4 ACTIVITY: Contract Requirements: Q1</i>
<i>types of building and construction drawings and specifications</i>	<i>Specifications: Q1 Working drawings: Q1 Q2 Q3 CPCBC4004A Assessment Requirements: Q2</i>
<i>types, scope and usage of labour through the employee and subcontractor systems</i>	<i>CPCBC4004A Assessment Requirements: Q4</i>
<i>operation and structure of the organisation's costing and contracting system.</i>	<i>Contracts: Q1 Q2 Q3 Q4 ACTIVITY: Contract Requirements: Q1 CPCBC4004A Assessment Requirements: Q4 Q6 Q9</i>

CRITICAL ASPECTS

Critical Aspects	Task / Question Map
A person who demonstrates competency in this unit must be able to provide evidence of the ability to:	
<i>identify materials required for a project</i>	<p>Schedules: Q1 Q2</p> <p>Prime costs: Q1 Q2 Q3 Q4</p> <p>PROJECT: Calculate Cost of Materials: Q2</p> <p>CPCBC4004A - Benchmark Questions: Q1</p> <p>CPCBC4004A Assessment Requirements: Q6</p>
<i>gather information about material supply</i>	<p>Schedules: Q1 Q2</p> <p>PROJECT: Calculate Cost of Materials: Q2</p> <p>CPCBC4004A Assessment Requirements: Q6</p>
<i>interpret measurements and calculate quantities and costs</i>	<p>Calculating areas: Q3 Q4 Q5</p> <p>ACTIVITY: Calculating material quantities: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10</p> <p>CPCBC4004A - Benchmark Questions: Q1</p> <p>CPCBC4004A Assessment Requirements: Q4 Q9</p>
<i>plan and allocate human resources</i>	<p>Charge out hourly rates calculated: Q1 Q2 Q3</p> <p>Award rates: Q1 Q2 Q3</p> <p>Time and personnel requirements estimated: Q1 Q2 Q3</p> <p>CPCBC4004A Assessment Requirements: Q4</p>
<i>identify and cost other related costs, such as those required to meet statutory and planning approval processes</i>	<p>Charge out hourly rates calculated: Q1 Q2 Q3</p> <p>Award rates: Q1 Q2 Q3</p> <p>CPCBC4004A Assessment Requirements: Q9</p>
<i>produce documentation that meets the timeframes and quality standards established by the organisation</i>	<p>PROJECT: Calculate Cost of Materials: Q1 Q2</p> <p>ACTIVITY: Contract Requirements: Q1</p> <p>CPCBC4004A Assessment Requirements: Q9</p>

communicate effectively, both verbally and in writing.

Specifications: Q6

PROJECT: Calculate Cost of Materials: Q1 Q2

Contracts: Q1 Q2 Q3 Q4

CPCBC4004A Assessment Requirements: Q9

RANGE STATEMENTS

Range Statements		Task / Question Map
<i>Plans and specifications include:</i>	<i>building codes</i>	<i>CPCBC4004A Assessment Requirements: Q2</i>
	<i>materials lists and quantity schedules</i>	<i>Schedules: Q1 Q2 Q3 Q4 Q5 CPCBC4004A Assessment Requirements: Q2</i>
	<i>materials specifications</i>	<i>Specifications: Q1 Q3 Q4 Q5 CPCBC4004A Assessment Requirements: Q2</i>
	<i>sketches or drawings</i>	<i>Working drawings: Q1 Q2 Q3 Calculating areas: Q1 Q2 Q3 Q4 Q5 ACTIVITY: Calculating material quantities: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 CPCBC4004A Assessment Requirements: Q2</i>
	<i>statements of requirements.</i>	<i>CPCBC4004A Assessment Requirements: Q2</i>
<i>Plant or equipment requirements include:</i>	<i>communications equipment</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>conveyors</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>heavy equipment, such as wheeled and tracked earthmoving equipment, trucks and articulated vehicles</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>hoists</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>mobile and tower cranes</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>on-site equipment, such as:</i>	
	<i>compressors</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>pumps</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>generators</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>portable lighting</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>lifting equipment</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
	<i>portable compaction equipment.</i>	<i>CPCBC4004A Assessment Requirements: Q7</i>
<i>Unit costs may include the cost of:</i>	<i>construction cost per square metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>

CPCBC4004A Identify and produce estimated costs for building and construction projects

	<i>installation of pipes per metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>installation of sanitary ware per unit</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>laying of foundation per metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>laying of slabs per square metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>laying of steel tray roofing per square metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>masonry walls per square metre</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
	<i>painting per square metre</i>	<i>CPCBC4004A - Benchmark Questions: Q1 Q2</i>
	<i>tiling per square metre.</i>	<i>CPCBC4004A - Benchmark Questions: Q4</i>
<i>Project costs include:</i>	<i>building or construction materials</i>	<i>PROJECT: Calculate Cost of Materials: Q2</i> <i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>communications costs</i>	<i>Overhead costs: Q3</i> <i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>cost of meeting statutory requirements, e.g. EPA</i>	<i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>fuels, lubricants and consumables</i>	<i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>organisational and subcontract labour hours</i>	<i>Overhead costs: Q3</i> <i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>overheads</i>	<i>Overhead costs: Q3</i> <i>CPCBC4004A - Benchmark Questions: Q2</i>
	<i>project administration costs</i>	<i>CPCBC4004A - Benchmark Questions: Q2</i>
<i>site facilities, such as:</i>		
	<i>offices</i>	<i>Prime costs: Q4</i> <i>Overhead costs: Q3</i>
	<i>toilets</i>	<i>Prime costs: Q4</i>
	<i>lunch rooms</i>	<i>Prime costs: Q4</i>
	<i>waste removal fees.</i>	<i>Prime costs: Q4</i>