

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.	Calculating paint quantities off plans: Q1 Working drawings: Q1 Q2 Q3 Tendering: Q1 Q2 Creating a Written Quote: Q1 Workplace Task: Determine materials and cost required for the project
	1.2. Project plans and specifications are read and understood.	Calculating paint quantities off plans: Q1 Working drawings: Q1 Q2 Q3 Schedules: Q1 Q2 Q3 Q4 Q5 Specifications: Q1 Q2 Q3 Tendering: Q1 Q2 Creating a Written Quote: Q1 Codes and standards: Q1 Q2 Q3 Interpreting a Painting Specification - James Cook Uni: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Workplace Task: Determine materials and cost required for the project
	1.3. Levels, heights, gradients and other measurements are interpreted.	Calculating areas: Q1 Q2 Calculating paint quantities off plans: Q1 Dimensions & measurements: Q1 Q2 Q3 Q4 Method of measurement: Q1 Q2 Q3 Q4 Q5 Q6 Creating a Written Quote: Q1 Workplace Task: Determine materials and cost required for the project

	<p>1.4. Measurements are made and quantities identified from plans and specifications that conform to standard industry practice.</p>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5 Calculating paint quantities off plans: Q1 Working drawings: Q1 Q2 Q3 Dimensions & measurements: Q1 Q2 Q3 Q4 Specifications: Q1 Q2 Q3 Method of measurement: Q1 Q2 Q3 Q4 Q5 Q6 Bill of quantities: Q1 Q2 Q3 Creating a Written Quote: Q1 Workplace Task: Determine materials and cost required for the project</p>
<p>2. Identify and calculate labour costs.</p>	<p>2.1. Types and numbers of appropriate on-site personnel are identified and the time required on site is estimated.</p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Estimating: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Award rates: Q3 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine labour needs and cost</p>
	<p>2.2. Labour hours for non-contract elements of on-site work are calculated.</p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Time and personnel requirements estimated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine labour needs and cost</p>

	<p>2.3. Costs or rates for required on-site work are calculated.</p>	<p>Calculating areas: Q1 Charge out hourly rates calculated: Q1 Q2 Q3 Prime costs: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Time and personnel requirements estimated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Environmental protection cost: Q1 Q2 Q3 Q4 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine labour needs and cost</p>
<p>3. Identify and establish physical resource requirements.</p>	<p>3.1. Physical resource requirements are identified.</p>	<p>Tendering: Q1 Q2 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Environmental protection cost: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>
	<p>3.2. Lists of materials are produced and quantities calculated.</p>	<p>Calculating paint quantities off plans: Q1 Bill of quantities: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 ACTIVITY: Calculate spread rates: Q1 Q2 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>

	<p>3.3. Quantities are established against project or standard construction contracts.</p>	<p>Calculating areas: Q1 Bill of quantities: Q1 Q2 Q3 Contracts: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 ACTIVITY: Calculate spread rates: Q1 Q2 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>
	<p>3.4. Supplier prices for materials and consumables are obtained.</p>	<p>Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>
	<p>3.5. Plant or equipment requirements are identified and costed.</p>	<p>Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Environmental protection cost: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>
<p>4. Develop estimated project costs.</p>	<p>4.1. Appropriate labour rates and material costs are selected and applied.</p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Written quotes: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Consolidating cost: Q1 Q2 Q3 Calculate Labour Cost: Q1 Workplace Task: Determine labour needs and cost</p>

	<p>4.2. Estimates of unit costs are determined and applied as appropriate.</p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Estimating: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine materials and cost required for the project</p>
	<p>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.</p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Codes and standards: Q3 Environmental protection cost: Q1 Q2 Q3 Q4 Consolidating cost: Q1 Q2 Q3 Workplace Task: Determine overhead cost</p>
	<p>4.4. Company overhead recovery and margins are applied.</p>	<p>Overhead costs: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Plant & equipment: Q1 Q2 Q3 Q4 Q5 Consolidating cost: Q1 Q2 Q3 Calculate On-cost, Overheads and Profit: Q2 Workplace Task: Estimate establishment cost Workplace Task: Determine profit margin</p>

	<p>4.5. Completed estimated project costs are calculated for inclusion in a tender or bill.</p>	<p>Calculating paint quantities off plans: Q1 Estimating: Q1 Q2 Q3 Prime costs: Q1 Q2 Q3 Q4 Overhead costs: Q1 Q2 Q3 Tendering: Q1 Q2 Written quotes: Q1 Q2 Q3 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Consolidating cost: Q1 Q2 Q3 Calculate On-cost, Overheads and Profit: Q1 Q2 Workplace Task: Produce a quote with the total cost</p>
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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>	<i>Tendering: Q1 Q2 Contracts: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1</i>
<i>read and interpret drawings and specifications</i>	<i>Working drawings: Q1 Q2 Q3 Dimensions & measurements: Q1 Q2 Q3 Q4 Specifications: Q1 Q2 Q3 Creating a Written Quote: Q1 ACTIVITY: Calculate spread rates: Q1 Q2 Codes and standards: Q1 Q2 Calculate Labour Cost: Q1</i>
<i>use language and concepts appropriate to cultural differences</i>	<i>Creating a Written Quote: Q1</i>
<i>use and interpret non-verbal communication</i>	<i>Creating a Written Quote: Q1 ACTIVITY: Calculate spread rates: Q1 Q2</i>
<i>contractual arrangement problem solving</i>	<i>Tendering: Q1 Q2 Contracts: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1 Costing & quoting: Q1 Q2 Q3 Codes and standards: Q1 Q2</i>

<p><i>estimate labour and materials costs from written information</i></p>	<p>Calculating areas: Q1 Charge out hourly rates calculated: Q1 Q2 Q3 Estimating: Q1 Q2 Q3 Prime costs: Q1 Q2 Q3 Q4 Tendering: Q1 Q2 Contracts: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1 Time and personnel requirements estimated: Q1 Q2 Q3 ACTIVITY: Calculate spread rates: Q1 Q2 Award rates: Q1 Q2 Q3 Calculate Labour Cost: Q1</p>
<p><i>numeracy skills to calculate labour hours and costs, material quantities and costs</i></p>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5 Method of measurement: Q5 Q6 Creating a Written Quote: Q1 Time and personnel requirements estimated: Q1 Q2 Q3 ACTIVITY: Calculate spread rates: Q1 Q2 Calculate Labour Cost: Q1 Calculate On-cost, Overheads and Profit: Q1 Q2</p>
<p><i>use appropriate costing software programs.</i></p>	<p>Charge out hourly rates calculated: Q1 Q2 Q3 Creating a Written Quote: Q1</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>Creating a Written Quote: Q1 Codes and standards: Q1 Q2 Q3</i>
<i>Australian standards relevant to the industry sector</i>	<i>Creating a Written Quote: Q1 Codes and standards: Q1 Q2 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>Creating a Written Quote: Q1 Codes and standards: Q1 Q2 Q3 Environmental protection cost: Q1 Q2 Q3 Q4</i>
<i>types of building and construction drawings and specifications</i>	<i>Working drawings: Q1 Q2 Q3 Dimensions & measurements: Q1 Q2 Q3 Q4 Specifications: Q1 Q2 Q3 Creating a Written Quote: Q1</i>
<i>types, scope and usage of labour through the employee and subcontractor systems</i>	<i>Creating a Written Quote: Q1</i>
<i>operation and structure of the organisation's costing and contracting system.</i>	<i>Contracts: Q1 Q2 Q3 Q4 Creating a Written Quote: Q1</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>	Prime costs: Q1 Q2 Q3 Q4 Tendering: Q1 Q2 Creating a Written Quote: Q1 ACTIVITY: Calculate spread rates: Q1 Q2 Interpreting a Painting Specification - James Cook Uni: Q4 Q5 Q6 Workplace Task: Determine materials and cost required for the project
<i>gather information about material supply</i>	Tendering: Q1 Q2 Creating a Written Quote: Q1 ACTIVITY: Calculate spread rates: Q1 Q2 Interpreting a Painting Specification - James Cook Uni: Q3 Q4 Workplace Task: Determine materials and cost required for the project
<i>interpret measurements and calculate quantities and costs</i>	Calculating areas: Q1 Q2 Q3 Q4 Q5 Calculating paint quantities off plans: Q1 Dimensions & measurements: Q1 Q2 Q3 Q4 Method of measurement: Q5 Q6 Creating a Written Quote: Q1 ACTIVITY: Calculate spread rates: Q1 Q2 Calculate On-cost, Overheads and Profit: Q1 Q2 Workplace Task: Determine materials and cost required for the project
<i>plan and allocate human resources</i>	Charge out hourly rates calculated: Q1 Q2 Q3 Creating a Written Quote: Q1 Time and personnel requirements estimated: Q1 Q2 Q3 Award rates: Q1 Q2 Q3 Workplace Task: Determine labour needs and cost

<p><i>identify and cost other related costs, such as those required to meet statutory and planning approval processes</i></p>	<p><i>Charge out hourly rates calculated: Q1 Q2 Q3</i> <i>Creating a Written Quote: Q1</i> <i>Costing & quoting: Q1 Q2 Q3</i> <i>Award rates: Q1 Q2 Q3</i> <i>Workplace Task: Estimate establishment cost</i> <i>Workplace Task: Determine overhead cost</i></p>
<p><i>produce documentation that meets the timeframes and quality standards established by the organisation</i></p>	<p><i>Creating a Written Quote: Q1</i> <i>Workplace Task: Produce a quote with the total cost</i></p>
<p><i>communicate effectively, both verbally and in writing.</i></p>	<p><i>Tendering: Q1 Q2</i> <i>Creating a Written Quote: Q1</i> <i>Workplace Task: Determine overhead cost</i></p>

RANGE STATEMENTS

Range Statements		Task / Question Map
<i>Plans and specifications include:</i>	<i>building codes</i>	<i>Specifications: Q1 Q2 Q3</i> <i>Creating a Written Quote: Q1</i> <i>Codes and standards: Q1 Q2 Q3</i>
	<i>materials lists and quantity schedules</i>	<i>Schedules: Q1 Q2 Q3 Q4 Q5</i> <i>Specifications: Q1 Q2 Q3</i> <i>Tendering: Q1 Q2</i> <i>Creating a Written Quote: Q1</i> <i>ACTIVITY: Calculate spread rates: Q1 Q2</i>
	<i>materials specifications</i>	<i>Specifications: Q1 Q2 Q3</i> <i>Method of measurement: Q5 Q6</i> <i>Tendering: Q1 Q2</i> <i>Creating a Written Quote: Q1</i> <i>ACTIVITY: Calculate spread rates: Q1 Q2</i> <i>Interpreting a Painting Specification - James Cook Uni: Q2 Q3 Q4 Q5 Q6 Q7</i>
	<i>sketches or drawings</i>	<i>Calculating paint quantities off plans: Q1</i> <i>Working drawings: Q1 Q2 Q3</i> <i>Specifications: Q1 Q2 Q3</i> <i>Creating a Written Quote: Q1</i> <i>Calculate Labour Cost: Q1</i>
	<i>statements of requirements.</i>	<i>Schedules: Q1 Q2 Q3 Q4 Q5</i> <i>Specifications: Q1 Q2 Q3</i> <i>Written quotes: Q1 Q2 Q3</i> <i>Contracts: Q1 Q2 Q3 Q4</i> <i>Creating a Written Quote: Q1</i> <i>ACTIVITY: Calculate spread rates: Q1 Q2</i> <i>Interpreting a Painting Specification - James Cook Uni: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8</i> <i>Calculate Labour Cost: Q1</i>

<i>Plant or equipment requirements include:</i>	<i>communications equipment</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>conveyors</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>heavy equipment, such as wheeled and tracked earthmoving equipment, trucks and articulated vehicles</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>hoists</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>mobile and tower cranes</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>on-site equipment, such as:</i>	
	<i>compressors</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>pumps</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>generators</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>portable lighting</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>lifting equipment</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>portable compaction equipment.</i>	<i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
<i>Unit costs may include the cost of:</i>	<i>construction cost per square metre</i>	<i>Calculating areas: Q1 Q2 Q3 Q4 Q5 Schedules: Q1 Q2 Q3 Q4 Q5 Method of measurement: Q5 Q6 Prime costs: Q2 Q3 Creating a Written Quote: Q1 Calculate Labour Cost: Q1</i>
	<i>installation of pipes per metre</i>	<i>Calculating areas: Q1 Q2 Q3 Q4 Q5 Schedules: Q1 Q2 Q3 Q4 Q5 Method of measurement: Q2 Prime costs: Q2 Q3</i>
	<i>installation of sanitary ware per unit</i>	<i>Calculating areas: Q1 Q2 Q3 Q4 Q5 Schedules: Q1 Q2 Q3 Q4 Q5 Prime costs: Q2 Q3</i>

	<i>laying of foundation per metre</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Method of measurement: Q2</p> <p>Prime costs: Q2 Q3</p>
	<i>laying of slabs per square metre</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Method of measurement: Q5 Q6</p> <p>Prime costs: Q2 Q3</p>
	<i>laying of steel tray roofing per square metre</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Method of measurement: Q5 Q6</p> <p>Prime costs: Q2 Q3</p>
	<i>masonry walls per square metre</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Method of measurement: Q5 Q6</p> <p>Prime costs: Q2 Q3</p>
	<i>painting per square metre</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Prime costs: Q2 Q3</p> <p>Creating a Written Quote: Q1</p> <p>ACTIVITY: Calculate spread rates: Q1 Q2</p> <p>Calculate Labour Cost: Q1</p>
	<i>tiling per square metre.</i>	<p>Calculating areas: Q1 Q2 Q3 Q4 Q5</p> <p>Schedules: Q1 Q2 Q3 Q4 Q5</p> <p>Method of measurement: Q5 Q6</p> <p>Prime costs: Q2 Q3</p>
<i>Project costs include:</i>	<i>building or construction materials</i>	<p>Tendering: Q1 Q2</p> <p>Creating a Written Quote: Q1</p> <p>Plant & equipment: Q1 Q2 Q3 Q4 Q5</p>

	<i>communications costs</i>	Overhead costs: Q1 Q2 Q3 Tendering: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5
	<i>cost of meeting statutory requirements, e.g. EPA</i>	Tendering: Q1 Q2 Codes and standards: Q3 Environmental protection cost: Q1 Q2 Q3 Q4 Plant & equipment: Q1 Q2 Q3 Q4 Q5
	<i>fuels, lubricants and consumables</i>	Prime costs: Q1 Q2 Q3 Q4 Tendering: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5
	<i>organisational and subcontract labour hours</i>	Overhead costs: Q1 Q2 Q3 Tendering: Q1 Q2 Creating a Written Quote: Q1 Plant & equipment: Q1 Q2 Q3 Q4 Q5 Calculate Labour Cost: Q1
	<i>overheads</i>	Overhead costs: Q1 Q2 Q3 Tendering: Q1 Q2 Creating a Written Quote: Q1 Plant & equipment: Q1 Q2 Q3 Q4 Q5 Calculate On-cost, Overheads and Profit: Q2
	<i>project administration costs</i>	Tendering: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5
<i>site facilities, such as:</i>		
	<i>offices</i>	Prime costs: Q3 Overhead costs: Q1 Q2 Q3 Tendering: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5
	<i>toilets</i>	Prime costs: Q3 Tendering: Q1 Q2 Plant & equipment: Q1 Q2 Q3 Q4 Q5

	<i>lunch rooms</i>	<i>Prime costs: Q3</i> <i>Tendering: Q1 Q2</i> <i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>
	<i>waste removal fees.</i>	<i>Prime costs: Q3</i> <i>Tendering: Q1 Q2</i> <i>Environmental protection cost: Q1 Q2</i> <i>Plant & equipment: Q1 Q2 Q3 Q4 Q5</i>