

## 6. Construction measurement principles

### Sample scheme of work

This sample scheme of work covers both classroom- and workshop-based learning for **Construction measurement principles**. It is based on 15 hours of learning over 5 sessions. It is an example only of a possible scheme of work and is based on theory and practical within an FE centre, but can be amended to suit all learning facilities with the necessary adjustments to meet individual learners' needs.

You can use the sample scheme of work as it is, adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory and practical workshops to support learners who have/need additional learning time.

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### Sample scheme of work

**Course/qualification:** T Level Technical Qualification in Construction: Onsite Construction (Level 3)

**Tutor's name:**

**Number of sessions:** 5    **Delivery hours:** 15    **Venue:**    **Group:**

Criteria
6.1 Accurate and appropriate measurement
6.2 Standard units of measurement and measurement techniques
6.3 Measurement standards, guidance and practice

Session	Criteria	Activities and resources	Skills check
1 3 hours	<p><b>Introduction to unit and expected outcomes.</b></p> <p><b>6.1 Accurate and appropriate measurement</b></p> <ul style="list-style-type: none"> <li>The benefits of accurate measurements to contractors, the</li> </ul>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Provide an overview of the unit – a tutor-led explanation of the content and the assessment methods.</li> <li>Use the snowball method with learners to come up with a list of why accurate measurement is so essential to construction projects. Expand the discussion to include who benefits, covering costs, time, safety and the environment.</li> </ul>	<p>Oral questioning</p> <p>Worksheet 1</p> <p>Feedback on Worksheet 1</p>

Session	Criteria	Activities and resources	Skills check
	<p>client/customer, to profitability and project success.</p> <ul style="list-style-type: none"> <li>The types of measurement unit and how these are applied and used in construction projects.</li> </ul>	<ul style="list-style-type: none"> <li>Deliver <b>PowerPoint 1: Accurate and appropriate measurement.</b></li> <li>Ask learners to consider when accurate measurement is critical and when more tolerance might be applied.</li> <li>Complete <b>Worksheet 1: Estimation and calculation.</b></li> </ul> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li><b>PowerPoint 1</b></li> <li><b>Worksheet 1</b></li> </ul>	
<p>2 3 hours</p>	<p><b>6.2 Standard units of measurement and measurement techniques</b></p> <ul style="list-style-type: none"> <li>Introduction of SI units of measurement for length, mass (weight), force, area and volume.</li> </ul>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Learners to complete <b>Worksheet 2: Standard units of measurement and measurement techniques.</b> Group discussion to be held comparing the answers and units used, leading into <b>PowerPoint 2: Measurement and techniques.</b></li> <li>Ask learners to complete <b>Worksheet 2</b> again but consider what they have learned so far.</li> <li>Compare initial answers to second answers and discuss.</li> </ul> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li><b>PowerPoint 2</b></li> <li><b>Worksheet 2</b></li> </ul>	<p>Oral questioning</p> <p>Worksheet 2</p> <p>Feedback on Worksheet 2: comparison of initial to secondary answers</p> <p>Group discussion</p>
<p>3 3 hours</p>	<p><b>6.2 Standard units of measurement and measurement techniques</b></p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Select a range of items, discuss measurement techniques.</li> <li>Deliver <b>PowerPoint 3: Site measurement.</b></li> </ul>	<p>Oral questioning</p>

Session	Criteria	Activities and resources	Skills check
	<ul style="list-style-type: none"> <li>Measurement techniques to include approximation, tapes, lasers and surveying equipment.</li> <li>Using estimation prior to measurement/calculation.</li> </ul>	<ul style="list-style-type: none"> <li>Learners to estimate measurements, then measure and determine the accuracy of the estimation.</li> <li>Take measurements for both smaller environments (indoor) and larger spaces (outdoor).</li> <li>Deliver <b>PowerPoint 4: Estimation</b>, with <b>Worksheet 3: Estimation</b>.</li> <li>According to learner needs, use the additional calculation worksheets provided to encourage numeracy and develop familiarity with calculating in common units of measurement (<b>Worksheets A and B</b>).</li> </ul> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li><b>PowerPoint 3</b></li> <li><b>PowerPoint 4</b></li> <li><b>Worksheet 3</b></li> <li><b>Worksheet A</b></li> <li><b>Worksheet B</b></li> </ul>	<p>Worksheet 3 Feedback on Worksheet 3</p> <p>Peer discussions comparing accuracy</p>
4 3 hours	<b>Entire unit</b>	Guest speaker, estimator or quantity surveyor to describe the role and importance of accuracy and their own role.	Q&A session with guest speaker
5 3 hours	<b>6.3 Measurement standards, guidance and practice</b> <ul style="list-style-type: none"> <li>How to use standardised scales for displaying measurements.</li> </ul>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Deliver <b>PowerPoint 5: Scales</b>, <b>PowerPoint 6: Tolerances</b> and <b>PowerPoint 7: BS1192</b>.</li> </ul>	Oral questioning

Session	Criteria	Activities and resources	Skills check
	<ul style="list-style-type: none"> <li>• Tolerances: how tolerances are applied and implications of not meeting tolerances.</li> <li>• Common scales.</li> <li>• Drawing sizes.</li> </ul>	<ul style="list-style-type: none"> <li>• Complete <b>Worksheet 4: Scales (i)</b>, <b>Worksheet 5: Scales (ii)</b>, <b>Worksheet 6: Measurement tools</b>. Learners should have various drawings available to compare size and use.</li> <li>• Group discussion to compare the drawing details, size and accuracy</li> </ul> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li>• <b>PowerPoint 5</b></li> <li>• <b>PowerPoint 6</b></li> <li>• <b>PowerPoint 7</b></li> <li>• <b>Worksheet 4</b></li> <li>• <b>Worksheet 5</b></li> <li>• <b>Worksheet 6</b></li> <li>• Tutor supplied drawings if available</li> </ul>	<p>Worksheets 4, 5 and 6</p> <p>Feedback on Worksheets 4, 5 and 6</p> <p>Group discussion</p> <p>Formative assessment</p>