

**Southwest Center for Microsystems Education (SCME)
University of New Mexico**

Units of Weights and Measures Learning Module

This booklet contains five (5) units:

Knowledge Probe (Pre-Quiz)
Units of Weights and Measures Primary Knowledge (PK)
Research Activity
Conversion Activity
Assessment

A Learning Module Map is included as a suggested outline on how to use this learning module.

This learning module provides information on the evolution of the current systems of weights and measures, and an overview of the International Standards of Units and metric system. Activities provide the opportunity to learn and practice converting from one unit of measure to another. This information and skill is needed to understand MEMS – how they work, how they are made, and how they are designed.

Target audiences: High School, Community College, University

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Website: www.scme-nm.org

Learning Module Map for Units of Weights and Measures

This learning module provides information on the evolution of the current systems of weights and measures, and an overview of the International Standards of Units and metric system. Activities provide the opportunity to learn and practice converting from one unit of measure to another. This information and skill is needed to understand MEMS – how they work, how they are made, and how they are designed.

This learning module consists of the following units:

- Knowledge Probe (KP or Pre-Quiz)
- Primary Knowledge (PK) reading material
- Research Activity
- Conversion Activity
- Assessment

Following is a suggested map on the implementation of this learning module.

IMPORTANT STEPS	KEY POINTS	REASONS
<u>Knowledge Probe (KP)</u> Have the participants complete the knowledge probe in the front of their learning modules	Tests for the participants' current knowledge of weights & measures, history, the metric system, and ability to convert from one unit to another.	By having the participants complete this KP prior to starting the learning module, you can compare these results with those of the final assessment to identify any learning that took place as a result of this learning module.
<u>Unit Presentation:</u> Present the <u>Units of Weights and Measures PK</u>	Participants should read the PK. A PowerPoint presentation can be downloaded from scme-nm.org and presented to all participants.	An introduction into the history and evolution of weights and measures as well as the metric system, will enhance the learning in the activities related to this learning module.

<p><u>Activity 1:</u> Assign the “Units of Weights and Measures Research Activity.”</p>	<p>This activity should be completed by small teams (2 to 3 participants).</p>	<p>Working in teams will increase discussion on the topics researched and lead to improved learning.</p> <p>Working in teams and team communication is an employment requirement of most manufacturing industries.</p>
<p><u>Activity 2:</u> Assign the “Units of Weights and Measures Conversion Activity”.</p>	<p>Have the participants complete this assignment for homework, then work with other participants to verify and discuss results.</p>	<p>This activity improves the participants’ ability to convert units of weights and measures within one system and between two systems of measurements (i.e., English to metric and metric to English)</p>
<p><u>Assessment:</u> Complete the Assessment.</p>		<p>Participants are evaluated on what they have learned about the history and evolution of weights and measures, and their ability to convert between various units of measure.</p> <p>Compare these results with those of the KP to determine what learning has taken place as a result of this learning module.</p>

Adapted from Graupp, P. & Wrona, R. (2006) The TWI Workbook: Essential Skills for Supervisors. New York, NY. Productivity Press.

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