

**DOMAIN 4: GENERAL KNOWLEDGE****SUB-DOMAIN: MATHEMATICS AND NUMERACY****MEASUREMENT**

**GOAL 40: CHILDREN DEMONSTRATE UNDERSTANDING OF MEASURABLE ATTRIBUTES OF OBJECTS AND THE UNITS, SYSTEMS, AND PROCESSES OF MEASUREMENT (INCLUDING SIZE, VOLUME, HEIGHT, WEIGHT, LENGTH, AREA, AND TIME).**

Age Range	Developmental Growth	Child Indicators	Caregiver Strategies
<p><b>60 Months through Kindergarten</b></p>	<p>Orders objects according to spatial attributes using nonstandard and standard units of measurement.</p>	<ul style="list-style-type: none"> <li>▪ Compares objects by measurement attributes (e.g. longer/shorter, heavy/ light, or more/less).</li> <li>▪ Uses multiple attributes for comparisons when sorting, classifying, and placing objects in a series (e.g. size, volume, height, weight, and length).</li> <li>▪ Uses basic measurement with standard units in the customary and metric systems (e.g. inches using a ruler or measuring tape).</li> <li>▪ Independently measures amounts and follows steps in simple experiments or cooking projects.</li> <li>▪ Estimates everyday measures (e.g. how many steps are needed to walk across a street.)</li> <li>▪ Uses conventional vocabulary of measurement ("pound," "inch," "cup"), though not always accurately.</li> <li>▪ Uses basic time vocabulary (e.g. minute, hour).</li> <li>▪ Names days of the week.</li> <li>▪ Orders events in a day.</li> <li>▪ Use comparison vocabulary for temperatures (hotter/colder).</li> <li>▪ Reads calendar according to days, weeks, months.</li> <li>▪ Directly compare two objects with a measurable attribute.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Demonstrate, explain, and engage child in activities that measure with standard traditional measuring units (e.g. measure a table by inches using measuring tape).</li> <li>▪ Provide a variety of measuring tools (tape measures, rulers, balance scales, measuring cups, or thermometers) and opportunities for child to select the tool needed for an appropriate measurement (e.g. using a scale to measure the apple's weight).</li> <li>▪ Introduce charts and graphing for children to use as a way to show sequences and quantity comparisons.</li> <li>▪ Provide calendar activities to describe and discuss events according to days, weeks, months.</li> <li>▪ Celebrate anniversaries, such as 100 days in school, or a month completed, or 10 days of sunny days.</li> <li>▪ Provide cooking experiences (including ethnic "home" foods) using written and picture recipes, sequences, and measurements with teacher support.</li> <li>▪ Play measuring games (e.g. "Which is heavier?" "Which is longer?" or "How many steps?").</li> <li>▪ Use posters, rhymes, and songs to support understanding that standard units of measurement remain constant (a foot in measurement is always 12 inches).</li> <li>▪ Provide opportunities to explore the concept that shape can change, but volume/amount remains constant (conservation of volume/mass). Include water and sand</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Understands that standard unit of measurement is common, to see which objects have "more" or "less."</li> <li>▪ Classifies objects into given categories; count the numbers of objects in each category and sort the categories by count.</li> </ul>	<p>play with variable size containers, and play dough for rolling, patting, and mashing opportunities.</p> <ul style="list-style-type: none"> <li>▪ Pose many "What if you change..." and "How do you know..." questions about measurement and experiments with materials such as sand, water, and play dough.</li> <li>▪ In dramatic play areas, include measuring tools, growth charts, dolls, and stuffed animals for weighing and determining height. Be sure to offer pencils and paper for recording findings.</li> </ul>
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