

6 th Grade		
Geometry and Measurement		
GLE	Key Content & Skills	Common Benchmark Assessments
<p>M:G&M:6:1 Uses properties or attributes of angles (right, acute, or obtuse) or sides (number of congruent sides, parallelism, or perpendicularity) to identify, describe, classify, or distinguish among different types of triangles (right, acute, obtuse, equiangular, <u>scalene</u>, <u>isosceles</u>, or equilateral) or quadrilaterals (rectangles, squares, rhombi, trapezoids, or parallelograms).</p>	<p>Types of figures: -Polygons-triangles -right, acute, obtuse, equiangular, scalene, isosceles, or equilateral or quadrilaterals - squares, rectangles, rhombi, and trapezoids or parallelograms. <i>-Hexagons, circles, octagons</i> Activities or Strategies for sorting, classifying, identifying, describing, and distinguishing geometric shapes: <i>-recognizes, names, builds, and draws polygons and circles in the environment</i> Attributes or Properties to Emphasize: -right, acute, or obtuse angles and number of congruent sides, parallelism or perpendicularity. <i>-Number of angles or number and length of sides – or classify angles relative to 90 deg. As more than, less than, or equal to</i></p>	<p>Sample Problem: 88</p>
<p>M:G&M:6:3 Uses properties or attributes (shape of bases, number of lateral faces, number of bases, <u>number of edges</u>, or <u>number of vertices</u>) to identify, compare, or describe three-dimensional shapes (rectangular prisms, triangular prisms, cylinders, spheres, pyramids, or cones).</p>	<p>Types of three dimensional geometric shapes: - Rectangular prisms, triangular prisms, cylinders, pyramids, cones, or spheres Attributes and Properties to Emphasize: -Shapes of bases, number of lateral faces, number of bases, number of edges, or number of vertices <i>-Finds examples of objects in the environment that are of the same geometric shape</i></p>	<p>Sample Problem: 89</p>

Highlighted Boxes are Power Standards

Bolded Boxes are Standards tested on NECAP

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<p>M:G&M:6:4 Demonstrates conceptual understanding of congruency by <u>predicting and describing the transformational steps (reflections, translations, and rotations) needed to show congruence (including the degree of rotation) and as the result of composing and decomposing two- and three-dimensional objects using models or explanations</u>; and using line and rotational symmetry to demonstrate congruent parts within a shape.</p>	<p>Composition and Decomposition of Shapes: - Two-dimensional and three-dimensional objects Transformations: - Predicting and describing the transformational steps(reflections, translations, and rotations) needed to show congruence (including the degree of rotation) <i>-Matching congruent figures using reflections, translations and rotations- flips, sides and turns e.g. such as using pentominos</i> Symmetry: -Using line and rotational symmetry to demonstrate congruent parts within a shape <i>-Making mirror images and creating shapes that have line symmetry. – Using line symmetry to demonstrate congruent parts within a shape</i> Possible Models, Representations or Explanations to Emphasize: - Using models or explanations <i>-Making mirror images and creating shapes that have line symmetry - By using models or explanations such as using triangular pattern blocks to construct a figure congruent to the hexagonal pattern block – By composing and decomposing two and three dimensional objects using models or explanations e.g. Given a cube students use blocks to construct a congruent cube</i></p>	
<p>M:G&M:6:5 Demonstrates conceptual understanding of similarity by describing the proportional effect on the linear dimensions of <u>polygons or circles</u> when scaling up or down while preserving the angles of polygons, or by solving related problems (including applying scales on maps). Describes effects using models or^{sc} explanations.</p>	<p>How to demonstrate conceptual understanding of similarity: <i>-Identifies similar shapes – applies scales on maps, or applies characteristics of similar figures which is same shape but not necessarily the same size to identify similar figures – Solves problems involving similar figures – Describes relationships using models or explanations which is a student choice – Describes effects using models or explanations</i> Connection to Proportionality: -Describing the proportional effect on the linear dimensions of polygons or circles when scaling up or down while preserving angles measures <i>-The same as above for triangles and rectangles preceding all polygons</i></p>	<p>Sample Problems: 90-92</p>

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<p>M:G&M:6:6 Demonstrates conceptual understanding of perimeter of polygons, the area of quadrilaterals or triangles, and the volume of rectangular prisms by using models, formulas, or by solving problems; and demonstrates understanding of the relationships of circle measures (radius to diameter and diameter to circumference) by solving related problems. Expresses all measures using appropriate units.</p>	<p>Measures: -Using appropriate units Length and Height: <i>- of 2-D objects</i> Perimeter: -Of polygons Area: -Quadrilaterals or triangles <i>-Polygons, rectangles, right triangles, or irregular figures on grids</i> Volume: -Rectangular prisms Circles: - Relationships of circle measures (radius to diameter and diameter to circumference) Problem solving strategies: -Using a variety of models, formulas, or solving related problems <i>-Comparing objects to trains of small cubes, using iterations of a small unit to measure an object – using manipulatives – solving on grids</i></p>	<p>Sample Problems: 93-97</p>
<p>M:G&M:6:7 Measures and uses units of measures appropriately and consistently, and makes conversions within systems when solving problems across the content strands. Benchmarks in Appendix B.</p>	<p>Activities or Strategies to emphasize: - Measures and uses units of measures appropriately and consistently and makes conversions within systems when solving problems across the content strands <i>-Uses comparative language to describe and compare attributes of objects – compares objects visually and with direct comparison using non standard units</i> Length: - Inch to (1/16 in.); Foot; Centimeter(to 1/10 cm); Meter(to 1/100); Yard; Mile (use in scale and rate questions); Kilometer (use in scale and rate questions) <i>-Starts with longer, shorter, taller, shorter to inch from whole inch to ½ in, 1/4in, 1/8on – Foot to whole inch – Centimeter to whole cm to ½ cm – Meter to whole cm to .5 cm – Yard, Mile, and Kilometer in scale questions</i> Time: - Hour (to 1 minute); Day; Year <i>-(Hour to 15 minutes then 5 minute intervals)</i> Temperature: - C and F (to one degree) Capacity: - Quart (to one ounce); Gallon; Pint; Liter <i>-Start - Quart to whole quart</i> Mass: - Kilogram; Gram (to 1/10 gram) <i>-Start Kilogram; Gram – to whole gram</i> Weight: -Pound (to ounce) <i>-Start pound to whole pound</i></p>	<p>Sample Problems: 98-99</p>

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	<p>Equivalencies:</p> <ul style="list-style-type: none"> - 12 inches in 1 foot; 100 centimeters in 1 meter; 3 feet in 1 yard; 36 inches in 1 yard; 10 millimeters in 1 centimeter; 1000 millimeters in 1 meter -24 hours in 1 day; 7 days in 1 week; 365 days in 1 year; 60 seconds in 1 minute 60 minutes in 1 hour -32 ounces in 1 quart; 4 quarts in 1 gallon; 2 pints in 1 quart; 1000 milliliters in 1 liter; 16 ounces in 1 pound -360degrees in 1 circle; 90 degrees in 1 right angle 	
M:G&M:6:8 No standard at this grade	<p>Kindergarten and First:</p> <p><i>understands time as it relates to calendar pattern - sequence the events in a day-knows the days of the week; months of the year- recognizes hour and half hour</i></p>	
M:G&M:6:9 No standard at this grade	<p>Grade K -5</p> <p><i>Interpret and give directions between locations – Plot points in the 4 Quadrants- Determine horizontal and vertical distances between points - Games, mapping, the vertices or polygons as they are reflected, rotated, and translated</i></p>	
M:G&M:6:10 No standard at this grade	<p>Grade 3-5</p> <p><i>Copying, comparing, drawing. And building models from 2 or 3 dimensional representations – do this with triangles, squares, rectangles, rhombi, trapezoids, hexagons, octagons, and circles, rectangular prisms, triangular prisms, cones, cylinders, and pyramids</i></p>	

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