Content Area **Geometry & Measurement** **Grade Level/Course: Basic Geometry (2 trimesters)** **District**

NOTE: All of the underlined vocab is representative of material that gets covered in regular Geometry not in Basic Geometry. (This is due to time constraints.)

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Unit #	Content	Objectives Skills Processes	Vocabulary	Assessment	Resources Chapters / Sections	Mn Standard & Benchmarks	Estimate # of days on Unit
Unit 1	Basics of Geometry	Introduction to Geometry and Reading a Ruler	language-logic-problem solving, definition, postulate(axiom), theorem, undefined terms (point, line, plane), set, colinear points, coplanar points, segment, ray	Dowel Project Unit Test	Sections 1.3, 1.5, 1.6	9.3.1.3 9.3.2.1 9.3.2.2 9.3.2.3 9.3.4.4	about 7
Unit 2	Basic Measurement	Understanding of geometric space with simple linear measurement and simple angular measurment.	coordinate points (one and two dimensional),distance, **midpoint**, segment bisector, endpoints, one dimensional units (mm,in.,cm,ft.,m,yd,mi.,km, etc…), **angle**, vertex, sides, **angle interior**, **angle exterior**, angle measure (degrees-minutes-seconds, decimal degrees), types of angles (zero, acute, right, obtuse, straight), rotation measure, angle bisector, pairs of angles (adjacent angles, vertical angles, linear pairs, comlementary, supplementary)	Unit Test	Sections 2.1 - 2.3	9.3.1.3 9.3.1.5 9.3.3.2 9.3.4.4	about 5
Unit 3	Logic and the Proof (2 column)	Understanding of the use and structure of logic to prove of disprove facts using geometry and algebra I concepts.	conjecture, inductive reasoning, deductive reasoning, 2-column proof structure, hypothesis, conclusion, equivalent conclusions, general conclusions, **converse, inverses, contrapositive, negation,** biconditional statements		Not completed in Basic Geometry	9.3.2.1 9.3.2.2 9.3.2.3 9.3.2.4 9.3.2.5 9.3.3.1	NA
Unit 4	Intersecting and Parallel Lines	Review of equations of lines from algerbra I and extends into all intersecting line rleaationships including parallels and perpendiculars.	horizontal lines, **vertical lines,** obliqie lines, slope, y-intercept, skew lines, parallel,intersection, **transversals, coresponding angles, alternate interior angles, alternate exterior angles**, consecutive interior angles, union, perpendicular, distance from a point to a line		Sections 3.1, 3.4, 3.7	9.3.1.5 9.3.2.4 9.3.3.1 9.3.3.2 9.3.4.4	about 7

Unit 5	Basic Construction	Understand how to use tools and basic rules and algorithms to minimize measurment error.	construction, algorithm, point rule, straightedge rule, compass rule, constructions: **perpendicular bisector of a segment,** perpendicular to a line through a point ON the line, perpendicular to a line through a point OFF the line, **angle bisector**, copy an angle measure, parallel to a line through a point OFF the line		Chapter 1 and Suppements	9.3.2.5 9.3.3.2 9.3.3.8	about 10
Unit 6	Triangles: Basic Facts and Congruence	Using triangles as a way to relate distances and angles to each other and what given measurements lead to congruent triangles.	triangle angle sum theorem, triangle of inequality, triangle opposite sides and angles relationship, measurement (exact, approximate, estimate), types of triangles (acute, right, obtuse, **scalene, isosceles, equilateral**), triangle height/altitude, triangle bases, interior angles, exterior angles, lines of symmetry, triangle congruence (SAS, ASA, SSS, AAS, SsA, HL, sSA), Not congruent triangles (similar and not similar), Pythagoreans theorem		Sections 4.1 - 4.2 & Section 4.4	9.3.3.2 9.3.3.3 9.3.3.4 9.3.3.6 9.3.3.7 9.3.4.1	about 7
Unit 7	Transformations: Congruent and Not	Understanding of the basic types of transformations with emphasis on the congruence transformations.	transformations, **preimage, image,** mappings, **isometries**, reflected points, reflection, reflection lines, reflected figures, figure orientation, **composites, decompose**, composites of reflections, translations, magnitude, rotations, center of rotation, glide-reflections, change factors, proportions		Section 5.1, 5.7 Sections 6.1, 6.4, 6.5 Section 11.8	9.3.4.6	about 12
Unit 8	Similarity Transformations	Extention of non-congruent transformations with an emphasis on the similarity of figures.	**scale changes**, dilation, expansion,enlagement, contraction, reduction, similar triangles, ratios, scale AA similarity, SAS similarity, SSS similarity, similar figures, geometric mean, scale drawings		Sections 7.1 - 7.5 & Supplementary Materials	9.3.1.4 9.3.1.5 9.3.3.6 9.3.3.8 9.3.4.1	about 10
Unit 9	Unit on Scale Drawings	Understanding how to make a scale drawings and models of 3-dimensional objects.	Scale Drawings, Scale Factors	Projects: Drawings of Bench in Classroom. Drawings and Model of Classroom.	Supplementary Materials		about 12

Unit 10	Quadrilaterals and other Polygons	Understand properties of the different types of quadrilaterals relating their distances and angle measures as well as parallelism.	Polygons, rectangle, quadrilaterals (kites, rhombus, trapezoid, isosceles trapezoid, parallogram, discrete lines, congruence, polygons (triangle, quadrilateral, pentagon, hexagon,heptagon,octagon, nonagon, decagon, n-gon), convex and non-convex polygons (concave), equilateral, equilangular, counterexamples, biconditionals (if-and-only-if), legs, bases, height/altitude, quadrilateral heirachy, quadrilateral symmetry, quadrilateral angle sum, polygon interior angle sum theorem, polygon exterior angle sum		Section 8.1 - 8.2	9.3.3.1 9.3.3.3 9.3.3.4 9.3.3.6 9.3.3.7 9.3.4.1	about 5
Unit 11	Circles, Perimeter and Area of Two Dimensional Figures	One and two dimensional measurements related to circles and polygons.	circle, pi, circumference, concentric circles, radius, diameter, chord, tangent line, secant line, central angles, perimeter formulas, unit circle, square units both customary and metric, area formulas (all triangles, all quadrilaterals, other combined figures), negative space, super-position, arc length, arc measure, **minor arcs, major arcs**, semicircles, sectors of a circle, **circumscribed**, minor sectors, major sectors	Unit Test	Section 8.3 - 8.7	9.3.1.3 9.3.1.5 9.3.3.8 9.3.4.1 9.3.4.2 9.3.4.3	about 12
Unit 12	3-D Figures and their Drawings	Understand the 5 basic geometric three dimensioanl figures and the different ways to represent those 3-D figures and their important 1-D measurements using 2-D drawings.	edge, surface, face, base, base edge, lateral surface, lateral face, slant height, altitude/height, hidden-lines, oblique figure, right figure, solid figure, surface figure, prisms, cylinder, cone, pyramid, **sphere**, nets, elevation views, 3-D views, cross-section, cross-sectional views, figure and drawing orientation, scale keys, seams verse folds		Section 9.1 - 9.3	9.3.1.2 9.3.3.4 9.3.3.6 9.3.4.1 9.3.4.2 9.3.4.3 9.3.4.7	about 8

Unit 13	Measurement of 3-D Figures	Understand the use of mathematical formulas and measurement conversion fact to solve for the 2 and 3 dimensional measurements of the 5 basic 3-D figures.	hidden right triangles, surface area and formulas, volume: formulas and cubic units both customary and metric, capacity and its units (gallon, quart, pint, fluid ounce, liter and all metic prefixes of the liter, mass, grams and all metric prefixes of the gram, weight, pounds, ounces, tons)	Unit Test	Section 9.4 - 9.6 & Supplementary Materials	9.3.1.3 9.3.1.1 9.3.1.2 9.3.1.5 9.3.3.4 9.3.3.6 9.3.4.1 9.3.4.2 9.3.4.3	about 10
Unit 14	Solving Triangles	Extending the use of congruent relationships of triangles to solve for unknown values when given specific angle and side length measurements.	square roots, rational numbers, irrational numbers, special triangles (45-45-90, 30-60-90, Pyth. Triples-> 3/4/5 , 5/12/13), trigonometric ratios (sine, cosine, tangent), law of cosines, law of sines	Unit Test	Section 10.1 - 10.6	9.3.1.3 9.3.1.5 9.3.3.2 - 9.3.3.8 9.3.4.1 - 9.3.4.3	about 12
Unit 15	Conic Sections and their Equations	Understand the coordinate geometry and equations the the simple conic section figures.	conic and the conic sections, point, intersecting lines, circle, ellipse, parabola, hyperbola, locus of points, vertex, focus, focii, directix, major axis, minor axis, sum of the focal radii, difference of the focal radii, asymptote			9.3.3.8 9.3.4.5	NA
Unit 16	Circles Special Facts	Add to our circle facts the lesser know angle and distance relationships relating to circle.	**inscribed angles, inscribed arcs**			9.3.3.8	NA