Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Shapes and Their Attributes	**identifies, investigates, and compares properties of…**	K.1 & K.2... circles, squares, rectangles, triangles, and ellipses	K.1 & K.2...circles, squares, rectangles, triangles, and ellipses	K.1, K.2, & K5… circles, squares, rectangles, triangles, ellipses	K.1 & K.2...add rhombi, octagons	K.1 & K.2... add hexagons, pentagons	K.1 & K.2a ...regular polygons having up to and including ten sides	K.1 & K.2… regular/irregular polygons through 10 sides including all special quadrilaterals and solids	K.1 & K.2.. .properties of polygons, including concave and convex and solids	K.1...properties of polygons, including concave and convex and solids	K.1 & K.2… properties of polygons, including angle measures and diagonals and solids
	recognizes and/or describes shapes…			K.4...in a pattern block set	▲K.4...in a pattern block set	K.4...in a pattern block set					
	sorts or solves real-world problems by recognizing or applying…	A.3...plane figures within a picture	A.2...plane figures by a given attribute	A.1...the properties of plane figures	A.1...the properties of plane figures	A.1a...the properties of plane figures	▲A.1a...the properties of plane figures	A.1a...the properties of regular polygons, circles, and semicircles	A.1a...the properties of polygons, circles, and semicircles		
	recognizes, sorts, describes, and/or compares…	K.3...cubes, rectangular prisms, cylinders, cones, and spheres	K.3...cubes, rectangular prisms, cylinders, cones, and spheres	K.3...cubes, rectangular prisms, cylinders, cones, and spheres	K.3...cubes, rectangular prisms, cylinders, cones, and spheres	K.3…add triangular prisms	▲K.3…add rectangular pyramids, triangular pyramids	K.3...prisms, cylinders, cones, spheres, and pyramids	K.4a...rectangular prism and triangular prism	K.1...properties of plane figures and solids	K.1...properties of plane figures and solids
	sorts or solves real-world problems by applying...	A.2...real-world solids				A.1b...the properties of solids	A.1b...the properties of solids	A.1b...the properties of solids	A.1b...the properties of solids		
	recognizes, determines, draws, and/or applies…			K.6...whether a shape has a line of symmetry	K.6…line(s) of symmetry of geometric shapes and real-world objects	K.6 & A.1a...line(s) of symmetry of geometric shapes and real-world objects	K.4. & ▲A.1… line(s) of symmetry of geometric shapes and real-world objects	K.4 & A.1a ...of symmetry in plane figures	A.1a...all lines of symmetry in plane figures	K.3...the rotational symmetries and line symmetries that exist in plane figures	K.3...the symmetries (point, line, plane) that exist in solids
	recognizes, describes, and/or solves…					K.5b...similar and congruent figures	K.2b...similar and congruent figures	K.5...the attributes of similar and congruent figures	K.5… corresponding parts of similar and congruent triangles and quadrilaterals	▲A.1a...real-world problems using the properties of similar and corresponding parts of congruent figures	K.4 & A.1a...real-world problems using the properties of similar and congruent figures
	understands and develops…										A.3...formal or informal proofs

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Compose/ Decompose	**demonstrates and/or identifies...**	A.1…how several plane figures can be combined to make a new shape	A.1...how several plane figures can be combined or separated to make a new shape	A.2 & A.3…add names the resulting shape	A.2a & A.3…add names the resulting shape	▲A.2...the plane figures used to form a composite figure	A.2...the plane figures used to form a composite figure	A.2a & A.3a… how to compose and decompose regular and irregular polygons, circles, and semicircles	A.2a & A.3a.. how to compose and decompose regular and irregular polygons, circles, and semicircles		
	demonstrates and/or identifies...			A.2b...how solids can be combined to make a new solid	A.2b...how solids can be combined to make a new solid			A.2b & A.3b… how to compose and decompose nets	A.2b-c & A.3b-c… add prisms, pyramids, cylinders, cones, spheres, and hemispheres		
Points, Lines, Rays, and Angles	**recognizes, draws, describes, compares, and/or uses…**					K.5c...points, lines (intersecting, parallel, perpendicular), line segments, and rays	K.5a & K.6 ...points, lines, line segments, and rays and their differences	K.6...symbols for line, line segment, ray, parallel, and perpendicular		K.7...the concepts of a point, line, and plane	
	describes…									K.8...the intersection of plane figures	
	solves real-world problems by applying…						A.1c...the properties of: intersecting, parallel, and perpendicular lines	A.1c...the properties of: intersecting, parallel, and perpendicular lines			
	recognizes, draws, and/or describes…						K.5b...angles as right, obtuse, or acute	▲K.7a...angles as right, obtuse, acute, or straight and uses symbol	K.6...symbols for angle and triangle to describe geometric figures	K.9...the angle relationships with parallel lines cut by a transversal	K.7...the relationships of the angles formed when parallel lines are cut by a transversal
	understands and/or develops…										A.3..formal or informal proofs

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Circles	**identifies, defines, and/or describes…**						K.7… circumference, radius, and diameter of a circle	K.8… circumference, radius, and diameter of circles and semicircles	K.4b...the radius and diameter of a cylinder	K.10...arcs and semicircles as parts of a circle and uses the standard notation for arc and circle	K.8...parts of a circle: arcs, chords, sectors of circles, secant and tangent lines, central and inscribed angles
	determines and/or describes…							K.10...the radius or diameter of a circle given one or the other	K.10...the relationship between the diameter and the circumference of a circle		
Special Triangles	**identifies, discusses, classifies, and/or uses…**							▲K.7b...triangles as right, obtuse, acute, scalene, isosceles, or equilateral	K.7...triangles as: right, acute, obtuse, or equiangular	K.5...Triangle Inequality Theorem to determine if a triangle exists	K.6a...congruence of triangles using: Side-Side-Side (SSS), Angle-Side-Angle (ASA), Side-Angle-Side (SAS), and Angle-Angle-Side (AAS)
	determines…								K.8...if a triangle can be constructed given sides of three different lengths		
	recognizes, identifies, and /or discusses…							K.9...that the sum of the angles of a triangle equals 180°	▲K.3b...sum of the interior angles of any quadrilateral is 360°	K.2a...properties of triangles related to the sum of the interior angles of any triangle is 180°	
	uses…								K.6...symbols for right and perpendicular for geometric figures		

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Special Triangles	**identifies, discusses, classifies, and/or uses…**								K.7..triangles as right, acute, obtuse, or equiangular	▲K.6 & A.1b… the Pythagorean theorem to determine if a triangle is a right triangle and find a missing side of a right triangle	▲K.5 & A.1b… the Pythagorean Theorem to determine if a triangle is a right triangle and to find a missing side of a right triangle
	recognizes and/or describes…										K.6b...the ratios of the sides in special right triangles: 30°-60°-90° and 45°-45°-90°
	uses…										A.2...deductive reasoning to justify the relationships between the sides of 30°-60°-90° and 45°-45°-90° triangles using the ratios of sides of similar triangles
	recognizes and/or identifies…								K.5… corresponding parts of similar and congruent triangles and quadrilaterals	K.4...properties of corresponding parts of similar and congruent triangles to find side or angle measures	
	understands and/or develops…										A.3...formal or informal proofs

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Special Quadrilaterals	**recognizes, describes, identifies, and/or discusses…**				K.5...a quadrilateral as any four-sided figure	K.5a...squares, rectangles, rhombi, parallelograms, trapezoids as special quadrilaterals	K.2a...regular polygons having up to and including ten sides	K.2...regular and irregular polygons through ten sides including all special types of quadrilaterals: squares, rectangles, parallelograms, rhombi, trapezoids, kites	▲K.3...angle and side properties related to parallelograms, rectangles, rhombi, squares, and trapezoids, and special quadrilaterals	K.2...properties of quadrilaterals related to parallelograms, rectangles, rhombi, squares, trapezoids, special quadrilaterals, kites, and sum of the interior angles of any quadrilateral is 360°	
	uses, recognizes, and/or generates…								K.9...generates a pattern for the sum of angles for 3-, 4-, 5-, … n-sides polygons	K.4...properties of corresponding parts of similar and congruent quadrilaterals to find side or angle measures using standard notation for similarity and congruence	
	understands and develops…										A.3...formal or informal proofs

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Estimates	**Compares…**	K.2...two measurements using these attributes: longer, shorter (length), taller, shorter (height), heavier, lighter (weight), hotter, colder (temperature)	K.2...compares two measurements using these attributes: longer, shorter (length), taller, shorter (height), heavier, lighter (weight), hotter, colder (temperature)								
	compares and orders…	A.1...concrete objects by length or weight	A.1...concrete objects by length or weight								
	compares…		A.2...the weight of two concrete objects using a balance	A.1...the weights of more than two concrete objects using a balance							
	users and/or determines...	K.1...whole number estimations for length using nonstandard units of measure	K.1...whole number estimations for length and weight using nonstandard units of measure	K.1...uses whole number estimations for length, weight, and volume using standard and nonstandard units of measure	K.1...whole number estimations for length, width, weight, volume, temperature, time, and perimeter using standard and nonstandard units of measure	K.1...whole number estimations for length, width, weight, volume, temperature, time, perimeter, and area using standard and nonstandard units of measure	K.1...whole number estimations for length, width, weight, volume, temperature, time, perimeter, and area using standard and nonstandard units of measure	K.1...whole number estimations for length, width, weight, volume, temperature, time, perimeter, and area using standard and nonstandard units of measure	K.1...whole number estimations for length, width, weight, volume, temperature, time, perimeter, and area using standard and nonstandard units of measure	K.1...rational number estimations for length, width, weight, volume, temperature, time, perimeter, area, and surface area using standard and nonstandard units of measure	K.1...real number estimations for length, width, weight, volume, temperature, time, distance, perimeter, area, surface area, and angle measurement using standard and nonstandard units of measure
	locates, names, and/or estimates…	A. 2...concrete objects that are about the same length or weight as a given concrete object	A.3...concrete objects that are about the same length, weight, or volume as a given concrete object	A.3...to check whether or not measurements or calculations for length in real-world problems are reasonable	A.2...to check whether or not measurements or calculations for length, temperature, and time in real-world problems are reasonable	▲A.2...to check whether or not measurements and calculations for length, width, weight, volume, temperature, time, and perimeter in real-world problems are reasonable	A.3...to check whether or not measurements or calculations for length, weight, temperature, time, perimeter, and area in real-world problems are reasonable	K.8 & A.2...an approximate value of the irrational number pi and to check whether or not measurements and calculations for length, width, weight, volume, temperature, time, perimeter, and area in real-world problems are reasonable	A.2...to check whether or not measurements or calculations for length, width, weight, volume, temperature, time, perimeter, and area in real-world problems are reasonable	K.4 & A.2...the measure of a concrete object in one system given the measure of that object in another system and the approximate conversion factor and check whether or not measurements or calculations for length, weight, volume, temperature, time, perimeter, area, and surface area in real world problems are reasonable	K.3 & A.2...conversions between customary and metric systems given the conversion unit or formula and to check whether or not measurements or calculations for length, weight, volume, temperature, time, distance, perimeter, area, surface area, and angle measurement in real-world problems are reasonable

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Estimates	**adjusts…**			A.4...original measurement or estimation for length and weight in real-world problems based on additional information (a frame of reference)	A.3...original measurement or estimation for length, weight, temperature, and time in real-world problems based on additional information (a frame of reference)	A.3...original measurement or estimation for length, width, weight, volume, temperature, time, and perimeter in real-world problems based on additional information (a frame of reference)	A.4...original measurement or estimation for length, width, weight, volume, temperature, time, and perimeter in real-world problems based on additional information (a frame of reference)	A2...original measurement or estimation based on additional information (a frame of reference)	A.2...original measurement or estimation based on additional information (a frame of reference)	A2...original measurement or estimation based on additional information (a frame of reference)	A.2and adjusts original measurement or estimation based on additional information (a frame of reference)
Time	**reads and tells…**	K.3...time at the hour using analog and digital clocks	K.3...time at the hour and half-hour using analog and digital clocks	K.2...time by five-minute intervals using analog and digital clocks	▲K.2...time to the minute using analog and digital clocks						
Measurement	**selects, uses, explains,**		K.4...appropriate measuring tools for length, weight, volume, and temperature for a given situation	K.3...appropriate measurement tools and units of measure for length, weight, volume, and temperature for a given situation	K.3...the selection of measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure: length, width, and height to the nearest half inch, inch, foot, yard, nearest whole unit of nonstandard unit, centimeter and meter, weight to the nearest whole unit of a nonstandard unit, volume to the nearest cup, pint, quart, or gallon, volume to the nearest liter, and temperature to the nearest degree	▲K.2...the selection of measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure: length, width, height to the nearest fourth of an inch, nearest centimeter, volume to the nearest cup, pint, quart, gallon, or liter, nearest whole unit of a nonstandard unit, weight to the nearest ounce or pound or to the nearest whole unit of a nonstandard unit of measure, temperature to the nearest degree, and time including elapsed time	K.2...the selection of measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure length, width, weight, volume, temperature, time, perimeter, and area using customary units of measurement to nearest eighth inch, metric units of measure to the nearest centimeter, nonstandard units of measure to the nearest whole unit, and time including elapsed time	K.2...the selection of measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate rational number representations for length, weight, volume, temperature, time, perimeter, area, and angle measurements	▲K.2...measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate rational number representations for length, weight, volume, temperature, time, perimeter, area, and angle measurements	K.2...measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate real number representations for length, weight, volume, temperature, time, perimeter, area, surface area, and angle measurements	K.2...measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate real number representations for length, weight, volume, temperature, time, distance, area, surface area, mass, midpoint, and angle measurements

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Measurement	**measures, uses, applies, describes and/or recognizes**		K.5...length and weight to the nearest whole unit using nonstandard units	K.4...length to the nearest inch or foot, to the nearest whole unit of a nonstandard unit, weight to the nearest nonstandard unit, volume to the nearest cup, pint, quart, or gallon, and temperature to the nearest degree				K.4 & K.6… customary units of measure to the nearest sixteenth of an inch and metric units of measure to the nearest millimeter and the composition of the metric system	K.8...appropriate units to describe rate as a unit of measure	K.6...how ratios and proportions can be used to measure inaccessible objects	K.6...properties of corresponding parts of similar and congruent figures to find measurements of missing sides
	describes, finds, calculates, knows, explains, and/or uses…								K.9...missing angle measurements in triangles and quadrilaterals	K.7...rates of change	K.7...ratios and proportions to describe rates of change
	solves…			A.2...real-world problems by applying appropriate measurements: length to the nearest inch or foot, length to the nearest whole unit of a nonstandard unit	▲A.1..solves real-world problems by applying appropriate measurements: length to the nearest inch, foot, or yard, length to the nearest centimeter or meter, length to the nearest whole unit of a nonstandard, and temperature to the nearest degree,	A.1...real-world problems by applying appropriate measurements: length to the nearest fourth of an inch, length to the nearest centimeter, temperature to the nearest degree, and weight to the nearest whole unit (pounds, grams, nonstandard unit),	A.1.a. solves real-world problems by applying appropriate measurements and measurement formulas: length to the nearest eighth of an inch or to the nearest centimeter, temperature to the nearest degree, and weight to the nearest whole unit (pounds, grams, nonstandard units)				

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Measurement	**uses and/or solves…**								A.1e-f...real-world problems by: finding missing angle measurements in triangles and quadrilaterals, applying various measurement techniques by selecting and using measurement tools, units of measure, and level of precision to find accurate rational number representations for length, weight, volume, temperature, time, perimeter, and area appropriate to a given situation	A.3...ratio and proportion to measure inaccessible objects	A.1d-e...real-world problems by: using the Pythagorean theorem, using rates of change
	uses…										A.3...indirect measurements to measure inaccessible objects
	states, or solves…		K.6...the number of days in a week and months in a year	K.5...the number of minutes in an hour and days in each month	K.4 & A.1...the number of hours in a day and days in a year, inches in a foot, inches in a yard, feet in a yard, centimeters in a meter, cups in a pint, pints in a quart, and quarts in a gallon, days in a week	K.3 & A.1...the number of weeks in a year, ounces in a pound, milliliters in a liter, grams in a kilogram, meters in a kilometer, and number of items in a dozen, time including elapsed time, months in a year, minutes in an hour	K.3 & ▲A.1...the number of feet and yards in a mile and real-world problems by applying appropriate measurements and measurement formulas of time including elapsed time, hours in a day, days in a week, and days, weeks, and months in a year, and minutes in an hour				

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Conversion	**converts and/or solves**					K.4...within the customary system inches and feet, feet and yards, inches and yards, cups and pints, pints and quarts, quarts and gallons, and within the metric system centimeters and meters	▲K.4 & A.2...add... meters and kilometers, milliliters and liters, grams and kilograms, and real-world problems that involve conversions within the same measurement system: inches and feet, feet and yards, inches and yards, cups and pints, pints and quarts, quarts and gallons, centimeters and meters	▲K.3...within the customary system, and within the metric system using the prefixes kilo, hecto, deka, deci, centi, and milli	K.3 & A.1a...within the customary system and within the metric system, and solves real-world problems by converting within the customary and the metric systems	K.3 & A.1a...within the customary system and within the metric system, and solves real-world problems by converting within the customary and the metric systems	A.1a...real-world problems by converting within the customary and the metric systems
Perimeter, Area, and Volume	**finds, knows, uses, recognizes, states, and/or applies**				K.5...the perimeter of squares, rectangles, and triangles given the measures of all the sides	K.5...the perimeter of two-dimensional figures given the measures of all the sides, the area of squares and rectangles using concrete objects	K.5...perimeter and area formulas for squares and rectangles	K.5...perimeter and area formulas for squares, rectangles, and triangles, and given measurement formulas to find perimeter and area of squares and rectangles, figures derived from squares and/or rectangles	K.4 & K.5...perimeter and area formulas for circles, squares, rectangles, triangles, and parallelograms, and perimeter and area of two-dimensional composite figures of circles, squares, rectangles, and triangles	K.5a...given measurement formulas to find: area of parallelograms and trapezoids	K.4...formulas for perimeter and area of squares, rectangle, and triangles, circumference and area of circles

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Perimeter, Area, and Volume	**solves…**					A.1...real-world problems by applying appropriate measurements for perimeter of squares, rectangles, and triangles	A.1.. real-world problems by applying appropriate measurements and measurement formulas for perimeter of squares, rectangles, and triangles, area of squares and rectangles	▲A.1...real-world problems by applying these measurement formulas for perimeter of polygons using the same unit of measurement, area of squares, rectangles, and triangles using the same unit of measurement	▲A.1b-c… real-world problems by finding perimeter and area of two-dimensional composite figures of squares, rectangles, triangles, and parallelograms and two-dimensional composite figures of squares, rectangles, and triangles	A.1b-c...real-world problems by finding perimeter and area of circles, squares, rectangles, triangles, parallelograms, and trapezoids, finding the volume and surface area of rectangular prisms	A.1b-c...real-world problems by finding the perimeter and the area of circles, squares, rectangles, triangles, parallelograms, and trapezoids and finding the volume and surface area of rectangular solids and cylinders
Perimeter, Area, and Volume	**finds, uses, states, recognizes, and/or applies…**							K.7...the volume of rectangular prisms using concrete objects	▲K.6 & K.7...given measurement formulas to find surface area of cubes and rectangular prisms, and volume of rectangular prisms using concrete objects	K.5b-c...given measurement formulas to find: surface area of rectangular prisms, triangular prisms, and cylinders, volume of rectangular prisms, triangular prisms, and cylinders	K.4 & K.5...formulas for volume of rectangular solids, and given measurement formulas to find perimeter, area, volume, and surface area of two- and three-dimensional figures (regular and irregular)

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Cardinal Points and Directions	**describes, knows, and/or uses…**	K.1...the spatial relationship between two concrete objects using appropriate vocabulary	K.1...the spatial relationship between two concrete objects using appropriate vocabulary	K.1...the cardinal points (north, south, east, west)	K.1...cardinal points (north, south, east, west) and intermediate points (northeast, southeast, northwest, southwest)	K.1...a transformation using cardinal points or positional directions					
	follows, uses, and/or describes…	A.2...directions to move concrete objects from one location to another using appropriate vocabulary	K.3 & A.2...movement of concrete objects using appropriate vocabulary and directions to move concrete objects from one location to another using appropriate vocabulary	A.2...directions to move objects from one location to another using appropriate vocabulary and the cardinal points (north, south, east, west)	A.2...directions to move from one location to another on a map and follows directions including the use of cardinal and intermediate points	A.2...cardinal points or positional directions to move from one location to another on a map or grid					
Transformations and Tessellations	**recognize, identify, describes, draws, and/or performs…**			K.3...when a shape has undergone one transformation (flip/reflection, turn/rotation, slide/translation)	K.2 & A.1...one transformation (reflection/flip, rotation/turn, and translation/slide) on a two-dimensional figure and real-world transformations (reflection/flip, rotation/turn, and translation/slide)	▲K.2 & A.1...one transformation (reflection/flip, rotation/turn, translation/slide) on a two-dimensional figure or concrete object and real-world transformations (reflection/flip, rotation/turn, translation/slide)	K.1 & A.1...through two transformations (reflection, rotation, translation) on a two-dimensional figure and a two-dimensional figure after performing one transformation (reflection, rotation, translation)	▲K.1...one or two transformations (reflection, rotation, translation) on a two-dimensional figure	K.1...single and multiple transformations [reflection, rotation, translation, reduction (contraction/shrinking), enlargement (magnification/growing)] on a two-dimensional figure	K.1 & A.2...single and multiple transformations [reflection, rotation, translation, reduction (contraction/shrinking), enlargement (magnification/growing)] on a two-dimensional figure and a two-dimensional figure after undergoing two specified transformations without using a concrete object	K.1 & A.2...single and multiple transformations [reflection, rotation, translation, reduction (contraction/shrinking), enlargement (magnification/growing)] on two- and three-dimensional figures and a simple three-dimensional shape after undergoing one specified transformation without using concrete objects to perform the transformation

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Transformations and Tessellations	**recognizes and/or describes…**						K.2...when an object is reduced or enlarged	A.1...a transformation of a given two-dimensional figure that moves it from its initial placement (pre-image) to its final placement (image)	A.1...the impact of transformations [reflection, rotation, translation, reduction (contraction/shrinking), enlargement (magnification/growing)] on the perimeter and area of squares and rectangles	K.2...a reflection of a given two-dimensional figure that moves it from its initial placement (pre-image) to its final placement (image) in the coordinate plane over the x- and y-axis	K.2...a three-dimensional figure created by rotating a simple two-dimensional figure around a fixed line
	recognize, generate, determines, and/or creates…							K.4...which figures will tessellate	K.4...a tessellation	K.4...where and how an object or a shape can be tessellated using single or multiple transformations	K.4...where and how an object or a shape can be tessellated using single or multiple transformations and creates a tessellation
	generalize, analysis's, and/or explains...									A.1...the impact of transformations on the area and perimeter of any two-dimensional geometric figure	▲A.1 & A.4...the impact of transformations on the perimeter and area of circles, rectangles, and triangles and volume of rectangular prisms and cylinders and transformations using such things as sketches and coordinate systems

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Congruence and Similarity	**identifies, shows, describes, and/or investigates…**	K.2 & A.1... two like objects or shapes from a set of four objects or shapes and two concrete objects or shapes are congruent by physically fitting one object or shape on top of the other	A.1...two concrete objects or shapes are congruent by physically fitting one object or shape on top of the other	A.1...two concrete objects or shapes are congruent by physically fitting one shape or object on top of the other		A.3...the properties of geometric shapes or concrete objects that stay the same and the properties that change when a transformation is performed			A.2...congruency and similarity of geometric figures using transformations	A.3...congruency, similarity, and symmetry of geometric figures using transformations	
	recognizes…		K.2...that changing an object's position or orientation does not change the name, size, or shape of the object	K.2...recognizes that changing an object's position or orientation including whether the object is nearer or farther away does not change the name, size, or shape of the object							
Perspective and Scale	**recognizes, identifies, or draws (generates)…**					K.3...three-dimensional figures (rectangular prisms, cylinders) and concrete objects from various perspectives (top, bottom, sides, corners)	▲K.3...three-dimensional figures (rectangular prisms, cylinders, cones, spheres, triangular prisms, rectangular pyramids) from various perspectives (top, bottom, side, corners)	K.3...three-dimensional figures from various perspectives (top, bottom, sides, corners)	K.2 & K.3...three-dimensional figures from various perspectives (top, bottom, sides, corners)	K.3.a...three-dimensional figures from a variety of perspectives (top, bottom, sides, corners)	K.3...a two-dimensional representation of a three-dimensional figure
	makes/draws, reduces/enlarges, or uses…						A.2...scale drawings of two-dimensional figures using a simple scale and grid paper	K.2 & A.2...(contracts/shrinks) and (magnifies/grows) simple shapes with simple scale factors and a scale drawing of a two-dimensional figure using a simple scale		K.3.b A.4 ...a scale drawing of a two-dimensional figure	A.3...a variety of scales to view and analyze two- and three-dimensional figures

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Perspective and Scale	**determines, draws, or uses…**								▲A.3...the actual dimensions and/or measurements of a two-dimensional figure represented in a scale drawing	K.3.c & A.4...a two-dimensional drawing of a three-dimensional figure and a scale drawing to determine the actual dimensions and/or measurements of a two-dimensional figure represented in a scale drawing	

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Number Lines and Coordinate Planes	**locates, plots, identifies, uses, organizes, recognizes and/or examines…**	K.1...whole numbers from 0 through 20 on a horizontal number line	K.1...whole numbers from 0 through 100 on a segment of a number line (horizontal/ vertical)	K.1...whole numbers from 0 through 1,000 on a segment of a number line (horizontal/ vertical)	K.2a & K.3...points on a coordinate plane using two positive whole numbers and points as ordered pairs in the first quadrant of a coordinate plane	K.2...points in the first quadrant of a coordinate plane to identify locations	K.1...points on a number line using integers	K.2...integer data using a T-table and plots the ordered pairs in all four quadrants of a coordinate plane	K.2.a..all four quadrants of a coordinate plane to identify in which quadrant or on which axis a point lies when given the coordinates of a point	▲K.1a-b...the coordinate plane to list several ordered pairs on the graph of a line and find the slope of the line and that ordered pairs that lie on the graph of an equation are solutions to that equation	K.1...two- and three-dimensional figures and their attributes including the graphs of functions on a coordinate plane using various methods including mental math, paper and pencil, concrete objects, and graphing utilities or other appropriate technology
	identifies, plots, uses, and/or determines…				K.2.b...points on a coordinate plane using a letter and a positive whole number	▲K.3...points as whole number ordered pairs in the first quadrant of a coordinate plane	K.3...points as ordered pairs in the first quadrant of a coordinate plane	▲K.3...all four quadrants of the coordinate plane to identify and plot the ordered pairs of integer values on a given graph	K.2b-d...all four quadrants of a coordinate plane to plot, identify, and list through five ordered pairs of a given line	▲K.1c...the coordinate plane to recognize that ordered pairs that do not lie on the graph of an equation are not solutions to that equation	K.2...if a given point lies on the graph of a given line or parabola without graphing and justifies the answer

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Number Lines and Coordinate Planes	**organize, plot, examines, and/or recognizes…**					K.4... whole number data using a T-table and plots the ordered pairs in the first quadrant of a coordinate plane	K.4...whole number data using a T-table and plots the ordered pairs in the first quadrant of a coordinate plane		K.3 & K.4...a given linear equation with whole number coefficients and constants and a whole number solution to find the ordered pairs, organize the ordered pairs using a T-table, and plot the ordered pairs on the coordinate plane and characteristics of two-dimensional figures on a coordinate plane using various methods including mental math, paper and pencil, concrete objects, and graphing utilities or other appropriate technology	K.2 & K.3...a given linear equation with integer coefficients and constants and an integer solution to find the ordered pairs, organizes the ordered pairs using a T-table, and plots the ordered pairs on a coordinate plane and characteristics of two-dimensional figures on a coordinate plane using various methods including mental math, paper and pencil, concrete objects, and graphing utilities or other appropriate technology	K.3, ▲K.6, & K.7...the slope of a line from a list of ordered pairs on the line and explains how the graph of the line is related to its slope, the equation of a line and transforms the equation into slope-intercept form in order to identify the slope and y-intercept and uses this information to graph the line, and the equation y = ax^2 + c as a parabola, and characteristics of the parabola including opens upward or downward, steepness, the vertex, maximum and minimum values, and line of symmetry, and sketches the graph of the parabola

Organizer	Indicator lead in phrase/wording	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth and Tenth Grade
Number Lines and Coordinate Planes	**solves, uses, recognizes, and/or explains…**				A.1. solves real-world problems using coordinate planes (coordinate grids) and map grids that have positive whole number and letter coordinates	A.2. solves real-world problems by plotting whole number ordered pairs in the first quadrant of a coordinate plane (coordinate grid)	A.2. solves real-world problems by plotting ordered pairs in the first quadrant of a coordinate plane (coordinate grid)			K.1.e. uses the coordinate plane to: solve simple systems of linear equations	▲K.4. finds and explains the relationship between the slopes of parallel and perpendicular linesA.3. recognizes and explains the effects of scale changes on the appearance of the graph of an equation involving a line or parabola
	counts, describes, represents, uses, explains, and/or finds…	K.2...forwards and backwards from a given whole number from 0 through 10 on a number line	K.2 & K.3...a given whole number from 0 to 100 as coming before or after another number on a number line and a number line to model addition and counting using whole numbers from 0 to 100	K.2 & K.3...the distance between two whole numbers from 0 through 1,000 on a segment of a number line and a segment of a number line to model addition and subtraction using whole numbers from 0 through 1,000	K.1...a number line to model the basic multiplication facts through the 5s and the multiplication facts of the 10s	K.1...a number line to model whole number multiplication facts from 1 x 1 through 12 x 12 and corresponding division facts	K.2...mathematical relationships between whole numbers, fractions, and decimals and where they appear on a number line	K.1...a number line to order rational numbers	K.1...the distance between the points on a number line by computing the absolute value of their difference	▲K.1.d...the coordinate plane to: determine the length of a side of a figure drawn on a coordinate plane with vertices having the same x- or y-coordinates	K.5...the Pythagorean Theorem to find distance
	solves, represents, generates, and/or translates…	A.1...real-world problems involving counting whole numbers from 0 through 20 using a number line	A.1...real-world problems involving counting and adding whole numbers from 0 to 50 using a number line	A.1...real-world problems involving counting, adding, and subtracting whole numbers from 0 through 1,000 using a segment of a number line		A.1...real-world problems that involve distance and location using coordinate planes and map grids with positive whole number and letter coordinates	A.1...real-world problems that involve distance and location using coordinate planes and map grids with positive whole number and letter coordinates	A.1 & A.2a-b...real-world problems using a number line with integer values, a coordinate plane to find the perimeter of squares, rectangles, and area of triangles, squares, and rectangles	A.1a-c...real-world problems using a coordinate plane to find perimeter of squares and rectangles, circumference of circles, area of circles, parallelograms, triangles, squares, and rectangles	A.1 & A.2...distance problems (including the use of the Pythagorean theorem, but not necessarily the distance formula) and between the written, numeric, algebraic, and geometric representations	A.1 & A.2...real-world problems that involve distance and two-dimensional geometric figures including parabolas in the form ax^2 + c, between the written, numeric, algebraic, and geometric representations

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Number Lines and Coordinate Planes	**recognizes and/or explains…**										A.3 & A.4...the effects of scale changes on the appearance of the graph of an equation involving a line or parabola and how changes in the constants and/or leading coefficients within the equation of a line or parabola affects the appearance of the graph of the equation