	K	1	2	3	4	5	6
Standard 3: Measurement & Data							
Benchmark 1		**Tell and write time.**	**Tell and write time.**	**Tell and write time.**	**Solve real world problems involving intervals of time**		
		Tell and write time in hours and half-hours using analog and digital	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes	Use four operations to solve word problems involving intervals of time		
Benchmark 2	**Represent and interpret data.**	**Represent and interpret data.**	**Represent and interpret data.**	**Represent and interpret data.**	**Represent and interpret data.**	**Represent and interpret data.**	
	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	
			Generate measurement data by measuring length of several objects to the nearest whole unit, or by making repeated measurements of the same object.Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.		Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		
Benchmark 3	**Identify, describe and reason with shapes and their attributes.**	**Identify, describe and reason with shapes and their attributes.**	**Identify, describe and reason with shapes and their attributes.**	**Identify, describe and reason with shapes and their attributes.**	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**	**Classify two-dimensional figures into categories based on their properties.**	
	Correctly name shapes regardless of their orientations or overall size.	Distinguish between defining attributes versus non-defining attributes ; build and draw shapes to possess defining attributes.	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Understand that shapes in different categories may share attributes, and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	
						Classify two-dimensional figures in a hierarchy based on properties.	

	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").		Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.		
	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms as above, below, beside, in front of, behind, and next to.				Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry		
					Understand concepts of angle and measure angles.		
					Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand the concepts of angle measurement		
					Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure		
Benchmark 4	**Describe and compare measurable attributes.**	**Measure lengths indirectly and by iterating length units.**	**Measure and estimate lengths in standard units.**	**Measure lengths in standard units.**			
	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Order three objects by length; compare the lengths of two objects indirectly by using a third object.	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.			
	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	Estimate lengths using units of inches, feet, centimeters, and meters.				
			Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.				

			Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.				
Benchmark 5	**Analyze, compare, create, and compose shapes.**	**Analyze, compare, create, and compose shapes.**	**Analyze, compare, create, and compose shapes.**				
	Analyze and compare two- and three- dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes .	Compose two-dimensional shapes or three-dimensional shapes to create a composite shape, and compose new shapes from the composite shape.					
	Model shapes in the world by building shapes from components and drawing shapes.						
	Compose simple shapes to form larger shapes.	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.				
Benchmark 6				**Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**	**Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.**	**Convert like measurement units within a given measurement system**	
				Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses of volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...	Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step, real world problems.	

					Use four operations to solve word problems.		
Benchmark 7						**Graph points on the coordinate plane to solve real-world and mathematical problems.**	**Graph points on the coordinate plane to solve real-world and mathematical problems.**
						Represent real world problems and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of point in the context of the situation.	
						Use a pair of perpendicular number lines, called axes, to define the coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel in the direction of of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates corresponds (e.g., x-axis and x-coordinates, y-axis and y-coordinates)	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
Benchmark 8			**Relate addition and subtraction to length.**	**Geometric measurement: understand concepts of area and relate to multiplication and addition. Recognize perimeter as an attribute of plane figures and distinguish between linear and area measure.**	**Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (Also benchmark 6)**	**Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.**	**Solve real-world and mathematical problems involving area, surface area, and volume.**

			Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0,1,2,...and represent whole-number sums and differences within 100 on a number line diagram.	Recognize area as an attribute of plane figures and understand concepts of area measurement.	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.		Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
				Relate area to the operations of multiplication and addition.			
				Measure area by counting unit squares (square cm, square m, square in, square ft, and improvised units)			
			Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units.	Solve real world and mathematical involving perimeters of polygons, including finding the perimeter given the side lengths, finding the unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.			
						Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
						Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
						Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	

							Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
Benchmark 9			**Work with money.**				
			Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and cents symbols appropriately.				