

<b><u>Number and Operations</u></b>	
<b>Understand numbers, ways of representing numbers, relationships among numbers and number systems</b>	
	compare and order integers, positive rationals and percents, including finding their approximate location on a number line
	recognize and generate equivalent forms of fractions, decimals and percents
	recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including expanded notation
	use factors and multiples to describe relationships between and among numbers, including whole number common factors and multiples
<b>Understand meanings of operations and how they relate to one another</b>	
	describe the effects of addition and subtraction on fractions and decimals
<b>Compute fluently and make reasonable estimates</b>	
	add and subtract positive rational numbers
	estimate and justify the results of addition and subtraction of positive rational numbers
	solve problems using equivalent ratios
<b><u>Algebraic Relationships</u></b>	
<b>Understand patterns, relations and functions</b>	
	represent and describe patterns with tables, graphs, pictures, symbolic rules or words
	compare various forms of representations to identify a pattern
	identify functions as linear or nonlinear from a table or graph
<b>Represent and analyze mathematical situations and structures using algebraic symbols</b>	
	use variables to represent unknown quantities in expressions
	recognize equivalent forms for simple algebraic expressions (associative, distributive properties)

<b>Use mathematical models to represent and understand quantitative relationships</b>	
	model and solve problems, using multiple representations such as graphs, tables, expressions and equations
<b>Analyze change in various contexts</b>	
	compare situations with constant or varying rates of change
<b><u>Geometric and Spatial Relationships</u></b>	
<b>Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</b>	
	identify the properties of 1- 2- and 3- dimensional shapes using the appropriate geometric vocabulary
	describe relationships between the corresponding angles and the length of corresponding sides of similar triangles (whole number scale factors)
<b>Specify locations and describe spatial relationships using coordinate geometry and other representational systems</b>	
	use coordinate geometry to construct geometric shapes
<b>Apply transformations and use symmetry to analyze mathematical situations</b>	
	describe the transformation from a given pre-image to its image using the terms reflection/flips, rotation/turn and translation/ slide
	create polygons and designs with rotational symmetry
<b>Use visualization, spatial reasoning and geometric modeling to solve problems</b>	
	use spatial visualization to identify isometric representations of net plans
	draw or use visual models to represent and solve problems

<b><u>Measurement</u></b>	
<b>Understand measurable attributes of objects and the units, systems and processes of measurement</b>	
	identify and justify an angle as acute, obtuse, straight or right
	solve problems involving elapsed time (hours and minutes)
<b>Apply appropriate techniques, tools and formulas to determine measurements</b>	
	estimate a measurement using either standard or non-standard unit of measurement
	select and use benchmarks to estimate measurements of 0-, 45-, 90-, 180-, 360- degree angles
	describe how to solve problems involving the area or perimeter of polygons
	convert from one unit to another within a system of measurement (mass and weight)
<b><u>Data and Probability</u></b>	
<b>Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them</b>	
	formulate questions, design studies and collect data about a characteristic
	interpret circle graphs; create and interpret stem-and-leaf plots
<b>Select and use appropriate statistical methods to analyze data</b>	
	find the range and measures of center, including median, mode and mean
	compare different representations of the same data and evaluate how well each representation shows important aspects of the data
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	use observations about differences between 2 samples to make conjectures about the populations from which

	the samples were taken
<b>Understand and apply basic concepts of probability</b>	
	use a model (diagrams, list, sample space, or area model) to illustrate the possible outcomes of an event