

Granite School District Elementary Special Education 6th Grade Math Common Core Scope and Sequence (Draft June, 2011)

Ratios & Proportional Relationships	The Number System	Expressions & Equations
<p>6th- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, "the ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak."</i></p> <p>6th- Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $\frac{3}{4}$ cup of flour for each cup of sugar."</i></p> <p>6th- Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables and equivalent ratios, tape diagrams, double number line diagrams, or equations.</p>	<p>6th- Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.</p> <p>6th- Fluently divide multi-digit numbers using the standard algorithm.</p> <p>6th- Fluently add, subtract, multiply and divide multi-digit decimals using the standard algorithm for each operation.</p> <p>6th- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9+2)$.</i></p> <p>6th- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6th- Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>6th- Understand ordering and absolute value of rational numbers.</p> <p>6th- Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<p>6th- Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6th- Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6th- Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</i></p> <p>6th- Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i></p> <p>6th- Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p> <p>6th- Use variables to represent numbers and write expressions when solving a real-world mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p> <p>6th- solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are all nonnegative rational numbers.</p> <p>6th- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.</p> <p>6th- Use variables to represent two quantities in a real-world problem that change in a relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. <i>For example, in a problem involving motion at a constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.</i></p>