

# Selma City Schools

## Sixth Grade Math Pacing Guide

2019-2020

- Thoughtful and effective **planning** throughout the school year is crucial for student mastery of standards.
- Once a standard is introduced, it is understood that the standard is continuously taught and/or reviewed throughout the **entire** school year (e.g., explicit instruction, learning centers, IXL, ScootPad, etc.).
- Some standards appear in multiple grading periods. The bulleted section typed below the standard is the portion of the standard that all students should master. This portion of the standard could be tested on the benchmark test given at the end of each 9 weeks.

<b>First Quarter</b> August-October	<b>Second Quarter</b> October-January	<b>Third Quarter</b> January-March	<b>Fourth Quarter</b> March-May
<p><b><u>The Number System</u></b>  <b>6.NS.4:</b> Find the greatest common factor (GCF) of two whole numbers less than or equal to 100 and the least common multiple (LCM) of two whole 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.</p> <p><b><u>Expressions and Equations</u></b>  <b>6.EE.1:</b> Write and evaluate numerical expressions involving whole-numbers exponents.  <b>6.EE.2:</b> Write, read and evaluate expressions in which letters stand for numbers.  <b>6.EE.2a:</b> Write expressions that record operations with</p>	<p><b><u>The Number System</u></b>  <b>6.NS.1:</b> Interpret and compute quotients of fractions and solve word problems involving division of fractions, e.g., by using visual fraction models and equations to represent the problem.  <b>6.NS.2:</b> Fluently divide multi-digit numbers using the standard algorithm.  <b>6.NS.3:</b> Fluently add, subtract, multiply, and divide multi-digit decimals using standard algorithm for each operation.  <b>6.NS.5:</b> Understand that positive and negative numbers are used together to describe quantities having opposite direction or values. (e. g. temperature above/below zero; elevation above/below sea level; credits/debits; positive/negative electrical charge); use positive and negative numbers to</p>	<p><b><u>Ratios and Proportions</u></b>  <b>6.RP.1:</b> Understand the concept of a ratio, and use ratio language to describe a ratio relationship between two quantities.  <b>6.RP.2:</b> Understand the concept of a unit rate <math>a</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>, and use rate language in the context of a ratio relationship.  <b>6.RP.3:</b> Use ratio and rate reasoning to solve real-world and mathematical problems, e. g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.  <b>6.RP.3a:</b> Make tables of equivalent ratios relating quantities with whole number measurements, find missing</p>	<p><b><u>Geometry</u></b>  <b>6.G.1:</b> 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.  <b>6.G.2:</b> 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 <math>V = lwh</math> and <math>V = Bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the</p>

<p>numbers and with letters standing for numbers.  <b>6.EE.2b:</b> Identify parts of an expression using mathematical terms (<i>sum, term, product, factor, quotient, and coefficient</i>); view one or more parts of an expression as a single entity.</p>	<p>represent quantities in real world contexts explaining the meaning of 0 in each situation.</p>	<p>values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.  <b>6.RP.3b:</b> Solve unit rate problems including those involving unit pricing and constant speed.</p>	<p>context of solving real-world and mathematical problems.  <b>6.G.4:</b> 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.</p>
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**6.EE.9:** Use variables to represent two quantities in a real-world problem that change in 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 the independent variables using graphs and tables, and relate these to the equation.

***Academic Language for 6<sup>th</sup> Grade***  
***Standards is listed on the following page.***

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***Academic Language for 6<sup>th</sup> Grade***  
***Standards is listed on the following page.***

### **Geometry**

**6.G.3:** 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.

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**6.RP.3c:** Find a percent of a quantity as a rate per 100  $\frac{30}{100}$  (e. g., 30% of a quantity means times the quantity); solve problems involving finding the whole, given a part and the percent.

**6.RP.3d:** Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

### **Statistics and Probability**

**6.SP.1:** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

**6.SP.2:** Understand that a set of data collected to answer a statistical question has a distribution, which can be described by its center, spread, and overall shape.

**6.SP.3:** Recognize that a measure of center for numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

**6.SP.4:** Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

**6.SP.5:** Summarize numerical data sets in relation to their context, such as by:

**6.SP.5a:** Reporting the number of observations.

**6.SP.5b:** Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

**6.SP.5c:** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation) as well as describing any overall pattern and any striking deviations from the overall

pattern with reference to the context in which the data were gathered.

**6.SP.5d:** Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

**(Step-up to 7<sup>th</sup> Grade – standards not assessed)**

**7.NS.2:** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

# Academic Language

**Academic Language** is the specialized vocabulary associated with instruction and mastery of academic content and tasks. The words listed below reflect the *minimum* vocabulary necessary for students to become proficient with grade-level standards.

<u>First Nine Weeks</u>	<u>Second Nine Weeks</u>	<u>Third Nine Weeks</u>	<u>Fourth Nine Weeks</u>
<p><b><u>The Number System</u></b> Factor, greatest common factor, multiple, least common multiple, distributive property, product</p> <p><b><u>Expressions and Equations</u></b> Expression, numerical expression, operations, order of operations, variable, algebraic expression, evaluate, exponent, term, coefficient, formula, substitution, equivalent, inequality</p>	<p><b><u>The Number System</u></b> Numerator, denominator, fraction, proper fraction, improper fraction, mixed number, factor, multiple, product, cross cancel, reciprocal, quotient, simplest form, decimal, divisor, dividend, tenths, hundredths, thousandths, ten-thousandths, terminating decimal, repeating decimal, absolute value, integer, positive, negative, rational number, irrational number, opposite, number line, inequality</p> <p><b><u>Geometry</u></b> Coordinate plane, polygon, coordinates, vertices, points, axes, x-axis, y-axis, ordered pairs, origin, quadrant,</p>	<p><b><u>Ratios and Proportions</u></b> Ratio, rate, unit rate, percent, proportion, equivalent ratios, cross products, numerator, denominator, variable, unknown, ratio table, scale, scale factor, conversion scale, tape diagram, double number line, coordinate plane</p>	<p><b><u>Geometry</u></b> Area, polygon, plane figure, square, rectangle, parallelogram, trapezoid, pentagon, octagon, formula, 3-dimensional figure, net, prism, pyramid, surface area, volume, rectangular prism, triangular prism, triangular pyramid, cube, pentagonal prism, hexagonal prism, octagonal prism</p> <p><b><u>Statistics and Probability</u></b> Statistical question, data, frequency, dot plot, interval, histogram, box and whisker plot, median, mean, mean absolute deviation, range, mode, interquartile range, deviation measure of center, measure of variation</p>