

## Westwood Public Schools Mathematics Learning Standards: Grade 5

### Problem Solving:

- Select and use a variety of strategies to estimate quantities, measurements and reasonableness of answers.
- Recognize real world connections of math concepts and operations.
- Select and use appropriate operation(s) to solve a problem.
- Use multiple strategies including conventional algorithms, pictures, models, words, etc. to interpret and solve math problems.
- Explain problem-solving strategies through discussion, writing, pictures, models, etc.

<b>Number Sense and Operations</b>	<b>Patterns, Relations and Algebra</b>	<b>Geometry</b>	<b>Measurement</b>	<b>Data Analysis, Statistics and Probability</b>
Demonstrate an understanding of place value through millions and thousandths.	Analyze and determine rules for extending symbolic, arithmetic and geometric patterns and progressions.	Identify, describe, and compare special types of triangles (isosceles, equilateral, right) and quadrilaterals (square, rectangle, parallelogram, rhombus, trapezoid).	Apply the concepts of perimeter and area to the solution of problems involving squares, rectangles, and triangles.	Describe and compare data using median, mean, mode, maximum, minimum and range.
Represent and compare large (millions) and small (thousandths) positive numbers in various forms, including expanded notation without exponents.	Use the property of equality, involving variables, to solve problems with whole numbers.	Using ordered pairs of whole numbers (including zero), graph, locate, and identify points, and describe paths on the Cartesian coordinate plane.	Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals.	Construct and interpret line plots, line graphs, bar graphs, and circle graphs.
Demonstrate understanding of fractions as a ratio of whole numbers, parts of collections and as locations on a number line.	Produce and interpret graphs that represent the relationship between two variables.	Identify relationships between points and lines, e.g. intersecting, parallel, perpendicular.	Solve problems involving simple unit conversions within a system of measurement.	Predict the probability of outcomes of simple experiments and test the predictions.
Identify and determine common equivalent fractions and mixed numbers, decimals, and percents.	Replace variables with given values and evaluate/simplify.	Identify types of basic line symmetry in two-dimensional shapes.	Find volumes and surface areas of rectangular prisms.	

Find, order and compare fractions, mixed numbers, percents, and decimals on the number line.	Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols, e.g. input-output tables.	Identify, describe, and compare special types of three-dimensional shapes (cubes, prisms, spheres, pyramids) based on their properties, such as edges and faces.	Find the sum of the angles in simple polygons (up to eight sides) with and without measuring the angles.	
Understand and apply mathematical concepts including prime, composite, least common multiple, greatest common factor, and divisibility rules for 2,3,4,5,6,9, and 10.	Solve problems involving proportional relationships using concrete models, tables, graphs, and paper-pencil methods.	Describe and perform transformations on two-dimensional shapes, e.g. translations, rotations, and reflections.		
Demonstrate an understanding of inverse relationships to simplify computation.		Determine if two triangles or two quadrilaterals are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions, e.g. translations, rotations, and reflections.		
Add, subtract, multiply and divide (with double digit divisors) whole numbers and positive decimals accurately and efficiently, using the division algorithm.				
Add, subtract, and multiply positive fractions and mixed numbers.				
Demonstrate an understanding of positive integer exponents, in particular when used in powers of ten.				

Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers and with positive fractions, mixed numbers, decimals, and percents. (No division of fractions).				
Apply the Order of Operations for expressions involving addition, subtraction, multiplication and division with grouping symbols				
Estimate the results of computations with whole numbers, and with positive fractions, mixed numbers, decimals, and percents. Describe reasonableness of estimates.				