Essential Concepts for Mathematics – 3rd Grade

Number and Operations
• Model, read and write whole numbers to 10,000 in a variety of ways including standard and expanded form.
• Identify the place and the value of a given digit in a four-digit numeral and round numbers to the nearest ten, hundred and thousand.
• Order and compare whole numbers on a number line and use the symbols when comparing whole numbers.
• Identify factors and multiples of whole numbers.
• Identify the denominator and numerator of a fraction
• Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, sixths and eighths..
• Compare and order fractions on a number line.
• Find equivalent fractions.
• Model problems involving addition, subtraction, multiplication and division.
• Use a variety of strategies and tools, such as repeated addition or subtraction, equal jumps on the number line and counters to model multiplication and division.
• Demonstrate, using objects, that multiplication and division by the same number are inverse operations.
• Write a story problem that relates to a given addition, subtraction or multiplication equation and write a number sentence to solve the problem.
• Compute and solve problems involving addition and subtraction of 3-and 4-digit numbers and basic facts of multiplication and division.
• Use a variety of methods to facilitate computation.
• Find the sum or difference of numbers including monetary amounts.
• Compute basic multiplication facts (0-10) and related division facts using a variety of strategies based on properties of addition and multiplication.

Algebra
• Create, represent and analyze growing patterns.
• Represent numerical relationships as expressions, equations and inequalities.
• Solve equations involving equivalent expressions.
• Use symbols to compare two expressions involving addition and subtraction.
• Recognize and use the commutative, associative, distributive and identity properties of addition and multiplication and the zero property of multiplication.

Geometry
• Describe and compare attributes of two-dimensional shape**s.**
• Identify, describe and classify polygons.
• Identify attributes for classifying triangles, and quadrilaterals.
• Identify right angles in geometric figures, or in appropriate objects.
• Determine whether other angles are greater or less than a right angle.
• Demonstrate the meaning of congruence through applying transformations.

Measurement
• Describe the part-whole relationships between metric and customary units of length, capacity, and weight.
• Measure the length of objects to the nearest centimeter, meter, half-and quarter-inch, foot, and yard.
• Measure capacity using cups and quarts, and measure weight using pounds and ounces.
• Identify the number of minutes in an hour, number of hours in a day, the number of days and weeks in a year.
• Describe and solve perimeter as a measurable attribute of two-dimensional figures, with metric and customary units.
• Determine simple equivalences of measurements.
• Compare given objects according to measurable attributes.
• Determine elapsed time in hours.

Data Analysis and Probability
• Collect, organize and display data to make predictions.
• Identify basic concepts of probability to describe the likelihood of a specific outcome