Third Grade End of Year Expectations
NUMERACY

By the end of the year students meeting grade level expectation will be able to:

Standards for Mathematical Practice	
Makes sense of problems and perseveres in solving them	Know that doing mathematics involves solving problems and discussing how they solved them. Explain to self the meaning of a problem and look for ways to solve it. Independently using concrete objects or pictures to help conceptualize and solve problems. Check thinking by asking self —Does this make sense? Listen to the strategies of others and will try different approaches. Often use another method to check answers.
Discusses and critiques own and other's reasoning, representations and strategies	Construct arguments using concrete referents, such as objects, pictures, and drawings about their own thinking as well as others' thinking. Explain thinking to others and respond to others' thinking using precise and concise language (mathematical communication) to participate in mathematical discussions involving questions like "How did you get that?" and " Why is that true?".
Communicates reasoning using clear and precise language, vocabulary, and notation	Use clear and precise mathematical language and terminology in discussions with others and in own reasoning. Be careful about specifying units of measure and state the meaning of the symbols they choose. *For instance, when figuring out the area of a rectangle they record answers in square units*.

Third Grade End of Year Expectations
NUMERACY

Operations and Algebraic Thinking	
Represents and solves problems involving multiplication and division	Understand multiplication as finding the total number of objects (product) when they know the number of groups (factor) and the number of items in each group (factor). Understand the relationship between multiplication and division, and that when dividing they are finding the number of groups when they know the total count and the number of items in a group, or finding the number of items in a group when they know the number of groups and the total count. Can problem solve a variety of situations, using a variety of representations (equal sized groups, arrays, area models number lines), and relate their models to equations. Use patterns and repeated reasoning (multiplication by 0, 1, 5, and 10) to help them identify patterns and become fluency with facts.
Understands properties of multiplication and the relationship between multiplication and division	Develop strategies based on the properties of multiplication and use these properties to understand the relationship between multiplication and division (commutative, associative, zero property). Use the distributive property (decomposing factors) to develop efficient strategies for multiplication - from basic facts to more complex multiplication). Describe patterns within multiplication and division facts.
Multiples and divides within 100	Use a variety of efficient strategies based on properties and patterns of multiplication to learn facts*. Use multiplication facts in terms of a missing factor to solve division facts*. **Drilling of facts comes after students have had many experiences building conceptual understanding through modeling and development of reasoning strategies.*
Solves problems using the four operations, and identifies and explains patterns in arithmetic	Use an operation or a combination of operations to solve two-step story problems using a variety of models and representations and connect these to equation notation. Use estimation as a means to think about the numbers in a problem and whether the solution is reasonable. Examine patterns in multiplication and division and understand how these patterns relate to the properties of each.

Third Grade End of Year Expectations
NUMERACY

Numbers and Operations in Base Ten	
Uses place value understanding and properties of operations to perform multi-digit arithmetic	Extend knowledge of place value through the hundreds to include rounding. Add and subtract fluently through 1,000 using place value and the relationship between addition and subtraction. Extend understanding of multiplication to include multiplying one-digit numbers by any multiple of 10. Generalize understanding of the relationship between the product and it's place value when multiplying by multiples of 10 to find more efficient ways to multiply.
Number and Operations - Fractions	
Develops understanding of fractions as numbers	Understand the meaning of the numerator and the denominator (halves, thirds, fourths, sixths, eighths). Compose other fractions from unit fractions (e.g. $\frac{1}{2}$, $\frac{1}{3}$) to make fractions less than, equal to or greater than 1. Understand that given the same size whole, the larger the denominator the smaller the size of the pieces because there are more pieces in the whole. Identify and demonstrate fractional parts of a whole that are the same size but not the same shape. Understand a fraction as a number on a number line and label intervals and points. Make generalizations about fractions with the same numerator and denominator (e.g. $\frac{4}{4} = 1$), fractions with a denominator of 1 (e.g. $\frac{2}{1} = 2$), and fractions with a numerator that is a multiple of the denominator (e.g. $\frac{12}{4}$ = 3).
Measurement and Data	
Solves problems involving measurement and estimation	Tell time to the minute. Solve elapsed time word problems with the use of clock models and number lines. Estimate and weigh objects to understand that size and weight of a liter, gram, and kilogram. Solve one-step problems involving mass and volume.

Third Grade End of Year Expectations
NUMERACY

Measurement and Data (continued)	
Represents and interprets data	Construct, read and interpret bar and pictographs. Solve one- and two-step word problems using information presented in a bar graph. Generate measurement data and show it on a line plot marked with halves and fourths of an inch.
Understands concepts of area and relates area to multiplication and addition	Recognize area as an attribute of two-dimensional regions. Find the area of a rectangle with whole number side lengths by tiling it or decomposing rectangles to make smaller arrays formed in rows and columns. Use an area model to represent the distributive property. Connect the area of a rectangle to the area model used to represent multiplication, and explain this connection (i.e. discover area can be found by length x width).
Recognizes perimeter and distinguishes between linear and area measures	Find the perimeter of an object by measuring all sides of an object and adding the measurement together. Sketch a representation to explain how to find the perimeter of an unknown side. Use the term perimeter appropriately and know the difference between area and perimeter.
Geometry	
Reasons with shapes and attributes	Describe, analyze and compare properties of two-dimensional shapes. Classify shapes by their sides and angles. Find how many ways a shape can be partitioned into parts with equal area. Identify and describe the fractional name of the area of a shape (e.g. the rectangle is divided into 4 equal parts. Each part is $\frac{1}{4}$ the total area of the rectangle).