Seabrook Elementary School

Mathematics

Overview:

Seabrook Elementary School teaches mathematics using the Eureka Math program K-4. There is an emphasis on deepening students' understanding of mathematical concepts by teaching a variety of strategies to solve problems and build complexity across modules and grade levels.

The power standards are derived from the Common Core State Standards (CCSS) and inform the competencies. The power standards and competencies are shared across SAU 21 and are reported out to parents using Powerschool. The move to Competency Based Education (CBE) is in alignment with the State of New Hampshire.

	Competency Statement	**Power Standards**
K	**Foundational Math Skills** Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables.	**Sequence:** Knows number names and the count sequence. **Numbers:** Identifies and writes numbers. **Counting:** Counts to tell the number of objects.
	Numbers and Number Systems Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.	**Comparing:** Compares numbers. **Place Value:** Works with numbers 11-19 to gain foundations for place value.
	Reasoning and Computational Strategies Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.	**Add & Subtract:** Understands addition and subtraction. **Fluency:** Fluently adds and subtracts within 5.
	Measurement & Data Students will use measurement tools, units and attributes to describe and compare objects and will gather, represent, and interpret data.	**Attributes:** Describes and compares measurable attributes of shapes. **Classify:** Classifies objects and counts the number of objects in each category.
	Geometry Students will reason with two dimensional shapes and complex figures to solve authentic applied problems.	**Shapes:** Identifies and describes shapes. **Reasoning:** Analyzes, compares, creates, and composes shapes.

1	**Symbolic Expression** Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables.	**Equations:** Works with addition and subtraction equations. **Problem-Solving:** Represents and solves problems involving addition and subtraction..
	Numbers and Number Systems Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.	**Sequence:** Extends the counting sequence. **Place Value:** Understands place value.
	Reasoning and Computational Strategies Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.	**Add & Subtract:** Adds and subtracts within 20 **Reasoning:** Uses place value understanding to add and subtract. **Properties:** Understands and applies properties of operations and the relationship between addition and subtraction.
	Measurement & Data Students will use measurement tools, units and attributes to describe and compare objects and will gather, represent, and interpret data.	**Length:** Measures lengths indirectly and with non-standard length units. **Time:** Tells and writes time. **Data:** Represents and interprets data.
	Geometry Students will reason with two dimensional shapes and complex figures to solve authentic applied problems.	**Shapes:** Reasons with shapes and their attributes. **Equal Parts:** Understands equal parts of shapes.
2	**Symbolic Expression** Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables.	**Problem-Solving:** Represents and solves problems involving addition and subtraction.
	Numbers and Number Systems Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.	**Place Value:** Understands place value.
	Reasoning and Computational Strategies Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.	**Reasoning:** Uses place value understanding and properties of operations to add and subtract. **Fluency:** Fluently adds and subtracts within 20 using mental strategies.

		Grouping: Works with equal groups of objects to gain foundations for multiplication.
	Measurement & Data Students will use measurement tools, units and attributes to describe and compare objects and will gather, represent, and interpret data.	**Data:** Represents and interprets data. **Length:** Measures and estimates lengths in standard units. **Connection:** Relates addition and subtraction to length. **Time & Money:** Works with time and money.
	Geometry Students will reason with two dimensional shapes and complex figures to solve authentic applied problems.	**Shapes:** Recognizes and draws shapes having specified attributes. **Equal Parts:** Understands fractional parts of shapes.
3	**Symbolic Expression** Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables	**Expressions:** Represents problems involving multiplication and division. **Operations:** Solves problems involving the four operations.
	Numbers and Number Systems Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.	**Fractions:** Develops understanding of fractions as numbers. **Equivalence:** Extends understanding of fraction equivalence and ordering.
	Reasoning and Computational Strategies Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.	**Multi-Digit:** Uses place value understanding and properties of operations to perform multi-digit arithmetic. **Problem-Solving:** Solves problems involving multiplication and division. **Properties:** Understands properties of multiplication and the relationship between multiplication and division. **Multiply & Divide:** Multiplies and divides within 100.
	Algebraic Functions Patterns, And Relations Students will make use of structure to represent, analyze, and generalize change or patterns in various contexts using models and justification.	**Patterns:** Explains patterns in arithmetic.
	Geometry & Measurement Students will use measurement and attributes of two-dimensional shapes and complex figures to describe, compare, and solve authentic	**Measurement:** Solves problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

	applied problems.	**Area:** Understands concepts of area and relates area to multiplication and to addition. **Perimeter:** Recognizes perimeter as an attribute of plane figures and distinguishes between linear and area measures. **Shapes:** Reasons with shapes and their attributes.
	Data Students will gather, represent, and interpret data related to a particular/single context, including authentic applications.	**Bar Graphs:** Creates and uses scaled pictures and bar graphs. **Line Plots:** Creates and reasons with line plots.
4	**Symbolic Expression** Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables	**Expressions:** Uses the four operations with whole numbers to solve problems.
	Numbers and Number Systems Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.	**Factors & Multiples:** Gains familiarity with factors and multiples. **Place Value:** Generalizes place value understanding for multi-digit whole numbers. **Equivalence:** Understands decimal notation for fractions, and compares decimal fractions.
	Reasoning and Computational Strategies Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.	**Fluency:** Fluently adds and subtracts multi-digit whole numbers using the standard algorithm. **Reasoning A/S:** Uses place value understanding and properties of operations to perform addition and subtraction. **Reasoning M/D:** Uses place value understanding and properties of operations to perform multiplication and division. **Fractions:** Builds fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
	Algebraic Functions Patterns, And Relations Students will make use of structure to represent, analyze, and generalize change or patterns in various contexts using models and justification.	**Patterns:** Generates and analyzes patterns.
	Geometry & Measurement Students will use measurement and attributes of two-dimensional shapes and complex figures to describe, compare, and solve authentic	**Measurement:** Solves problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

	applied problems.	**Angles:** Understands concepts of angle and measure angles. **Classification:** Draws and identifies lines and angles, and classifies shapes by properties of their lines and angles.
	Data Students will gather, represent, and interpret data related to a particular/single context, including authentic applications.	**Line Plots:** Creates and analyzes line plots.

General Definitions:

Competency-Based Learning: Students advance upon demonstrated mastery; competencies include explicit, measurable, transferable learning objectives that empower students; assessment is meaningful and a positive learning experience for students; students receive timely, differentiated support based on their individual learning needs; and learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions.

CC State Standards: The Common Core is a set of high-quality academic standards in Mathematics and English Language Arts/literacy (ELA). These learning goals outline what a student should know and be able to do at the end of each grade level.