

### K4/Transitional Kinder STEM SSM - 2017-18

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Counting & Numbers to 10	PK.CC.2 - 4	PK.CC.1 PK.MD.2	The focus of this unit is on practicing rote counting and understanding numbers to 10. Students learn how to write them, spell them, and count quantities within that amount.
Math Unit 2 Comparing Numbers	PK.CC.5	PK.MD.2	Students work on comparing groups of objects by matching and counting.
Sci Unit 1 Forces & Motion	K.PS2.1 K.PS2.2	n/a	Students examine, reflect upon, describe, and discuss how pushes and pulls of various objects are used to produce motion. The unit gives students experiences that challenge their understanding of motion, including a design challenge using a collision.
Math Unit 3 Beginning Geometry	PK.G.1 - 5	PK.MD.2	Students work on identifying, building, drawing and composing 2-D and 3-D shapes.
Math Unit 4 Beginning Measurement	PK.MD.1 - 2	n/a	This unit focuses on describing objects by measurable attributes (big, tall, short, color, etc). Students begin to practice sorting groups by these attributes.
Sci Unit 2 Animals, Plants & the Environment	K.LS1.1 K.ESS2.2 K.ESS3.1	n/a	Students learn about what it means for something to be alive, specifically that plants need air, sunlight, and water to grow. Students will identify that living things live in places that provide for those needs and sometimes change their environment to fit their needs.
Math Unit 5 Beginning Addition & Subtraction	PK.OA.1	n/a	Students work on making one/two more and less than a given group of objects and a given number. They learn to model and solve simple join/separate result-unknown number stories.
Math Unit 6 Matching, Sorting & Patterns	PK.CC.6 PK.OA.2 PK.MD.2	n/a	Students build mathematical reasoning by recognizing and extending simple patterns. They also practice ordering language (first, last, next, before, after) with patterns. Sorting work continues, as well as identifying which object does/doesn't belong with a given set of objects.
Sci Unit 3 Weather	K.PS3.1 K.PS3.2 K.ESS2.1	n/a	Students will apply schema of different weather components. Building on their knowledge of weather, students will internalize typical weather patterns that define the four seasons. Lastly, students will conceive and create ways to shield us and other living things, such as dogs, from aspects of weather that may be harmful

## Kindergarten STEM SSM - 2017-18

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Numbers to 20	K.CC.3 - 5	K.CC.1 K.CC.2	Students practice counting and understanding numbers to 20 during this first unit. They work on how to write numbers, spell them in word form, and count quantities within that amount.
Math Unit 2 Matching & Sorting Shapes	K.G.1 - 4	K.CC.5 K.MD.3	Students work on understanding 2-D & 3-D shapes, practicing identifying and describing them. They also begin work with sorting and matching, using their new understanding of shapes and attributes to sort items into categories. Counting work continues as they are asked to count the amount in each category after sorting.
Science Unit 1 Forces & Motion	K.PS2.1 K.PS2.2	n/a	Students examine, reflect upon, describe, and discuss how pushes and pulls of various objects are used to produce motion. The unit gives students experiences that challenge their understanding of motion, including a design challenge using a collision.
Math Unit 3 Comparing, Adding & Subtracting Numbers to 20	K.CC.6 - 7 K.OA.1 K.OA.3 - 4 K.NBT.1	K.OA.2 K.OA.5	Examination of numbers to 20 continues, with students comparing sets and numbers to 20. They also work on composing and decomposing numbers, finding pairs to 10 as well as representing teens numbers as a ten and loose ones. Students start number stories to contextualize part-whole relationships and join & separate scenarios.
Math Unit 4 Measurement & Data	K.MD.1 - 3	n/a	Students practice describing objects by measurable attributes (big, tall, short, etc) and comparing different objects by attribute. Sorting work continues, making categories by different attributes of objects, and sorting categories by count.
Science Unit 2 Animals, Plants & the Environment	K.LS1.1 K.ESS2.2 K.ESS3.1	1.MD.4	Students learn about what it means for something to be alive, specifically that plants need air, sunlight, and water to grow. Students will identify that living things live in places that provide for those needs and sometimes change their environment to fit their needs.
Math Unit 5 Telling Time & Composing & Decomposing Shapes	K.G.5 - 6 1.MD.3 1.G.3	n/a	Students return to shapes, working on building, drawing, decomposing and composing them. Additional geometry work is also covered such as beginning to explore equal shares (halves and fourths), and lines of symmetry. Students end the unit by learning how to tell time to the hour and half hour.
Math Unit 6 Working with Numbers Beyond 20	1.NBT.1 1.NBT.2	n/a	Students end the year in preparation for work with larger numbers in grade 1 - practicing counting, sorting & working with numbers beyond 20.
Science Unit 3 Weather	K.PS3.1 K.PS3.2 K.ESS2.1	n/a	Students will apply schema of different weather components. Building on their knowledge of weather, students will internalize typical weather patterns that define the four seasons. Lastly, students will conceive and create ways to shield us and other living things, such as dogs, from aspects of weather that may be harmful

**Grade 1 STEM SSM - 2017-18**

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Addition & Subtraction Strategies to 20	1.OA.5 - 8	1.NBT.1	Students build fluency with addition & subtraction within 20, focusing on making 10s and building automaticity with addition & subtraction within 10. Strategies include counting on and counting back, decomposing and renaming numbers, and adding to and subtracting in smaller chunks.
Math Unit 2 Place Value & Comparing Numbers	1.NBT.1 - 3	1.OA.6	Students focus on place value and composing and decomposing numbers, building deep fluency with idea of a ten unit. They also use place value to compare numbers.
Science Unit 1 Organisms & Heredity	1.LS1.1 1.LS1.2 1.LS3.1	n/a	Students explore that plants and animals live in places that best suit their survival, as well as how parents and offspring are similar and different.
Math Unit 3 Addition & Subtraction within 50	1.OA.3 -4 1.OA.8 1.NBT.4	n/a	Students focus on the relationship between addition and subtraction, properties of operations and place value with numbers within 50.
Math Unit 4 Length & Data	1.MD.1 -2 1.MD.4	1.OA.4 1.NBT.3	Students practice length measurement and comparing lengths. They create bar graphs and ask/answer questions about data. The connection is built between more than/less than statements about length and data to addition and subtraction situations.
Science Unit 2 Communication	1.PS4.1 1.PS4.2 1.PS4.3 1.PS4.4	n/a	Students will explore that sound is caused by vibration, and vice versa, as well as that materials allow different amounts of light to pass through them. Students will end the unit by delivering a message over a distance using sound and light.
Math Unit 5 Addition & Subtraction within 100	1.OA.3 1.OA.8 1.NBT.4 - 6	1.NBT.2.C	Students continue practice with addition and subtraction strategies with larger numbers. Strategies center around use of models and drawings, properties of operations, and the inverse relationship between addition and subtraction.
Math Unit 6 Shapes & Time	1.MD.3 1.G.1 - 3	n/a	Students work with defining attributes and composite shapes. They also explore equal shares of shapes and build connections with telling time to the hour and half hour.
Science Unit 3 Air and Weather	2.PS1.1 K.ESS2.1	n/a	Students explore properties of a common gas mixture—air. Using vials, syringes, and tubing, students experience air as matter and that air can be compressed and cause pressure. Students will construct and compare parachutes as well as observe and describe wind speed using pinwheels and an anemometer.

## Grade 2 STEM SSM - 2017-18

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Place Value	2.NBT.1 - 4 2.NBT.8	2.MD.8	Students focus on place value and composing and decomposing numbers, building deep fluency with idea of a hundred unit. Students begin working with money, including pennies, dimes, and dollars, to complement place value and bundling. They also practice skip counting, mentally finding 10 or 100 more/less than a number based on place value strategies.
Math Unit 2 Addition & Subtraction within 200	2.NBT.5, 7, 9 2.MD.6	2.MD.2	Students work on building addition and subtraction strategies with 100s, 10s and 1s units, focusing on composing and decomposing a single hundred. They also use the number line to represent sums and differences.
Science Unit 1 Matter	2.PS1.1 2.PS1.2 2.PS1.3	n/a	Students will learn about properties of solid and liquid matter through comparing and contrasting different materials. Based on sorting and newly developed vocabulary, students will justify why materials would be better or worse for different purposes based on their properties.
Math Unit 3 Addition & Subtraction within 1,000	2.NBT.6, 7, 9 2.MD.8	2.NBT.1 2.NBT.5	Students extend addition & subtraction strategies to larger numbers, applying computation strategies to work with money. Complexity of working with money increases as other coins are introduced.
Math Unit 4 Measurement	2.MD.1 - 4 2.MD.9	2.MD.6	Students measure lengths of objects, compare lengths, and make a line plot representing measurements.
Science Unit 2 Plants, Pollination, and Animals	2.LS2.1 2.LS2.2 2.LS4.1	2.MD.10	Students investigate what plants require to grow, specifically the pollination of flowering plants by pollinators. Lastly, students will categorize animals as amphibians, birds, mammals, reptiles, and fish based on characteristics.
Math Unit 5 Time & Equal Shares	2.MD.7 2.G.1 & 3	n/a	Students work to understand equal shares and partitioning shapes, extending this to telling time - recognizing an analog clock as a circle that has been partitioned into equal slices (halves for half hours, quarters for quarter hours, etc.).
Math Unit 6 Multiplication Foundations	2.OA.3 - 4 2.G.2	2.NBT.2	Exploring repeated addition, even and odd numbers, and arrays in preparation for multiplication.
Science Unit 3 The Materials of the Earth	2.PS1.1 2.ESS1.1 2.ESS2.1	n/a	Students learn about the formation and weathering of earth materials by sorting and categorizing rocks using their knowledge of the properties of solids.

### Grade 3 STEM SSM - 2017-18

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Place Value, Addition & Subtraction	3.NBT.1 - 2 3.MD.1 3.OA.9	3.OA.5	Students use place value understandings from grade 2 to explore rounding, as well as to build additional fluency with addition & subtraction. Elapsed time is covered as a natural extension of adding/subtracting on the number line. Addition and subtraction patterns are covered as well.
Math Unit 2 Multiplication & Division Part 1	3.OA.1 - 2 3.OA.4 3.OA.6 - 7	n/a	This unit focuses on foundational understandings of multiplication & division and on the relationship between the two: recognizing situations, modeling with manipulatives, and fact families.
Science Unit 1 Fossils, Adaptations, & Environments	3.LS2.1 3.LS4.1 - 4	n/a	Students will learn that fossils are created from living things from long ago. Students learn that adaptations are structures and behaviors of an organism that help it survive and reproduce. Students are also introduced to organisms to survive and thrive as groups in different kinds of environments.
Math Unit 3 Multiplication & Division Part 2	3.OA.4 - 5 3.OA.7 & 9 3.MD.3 3.NBT.3	3.OA.6	Students focus on building multiplication & division strategies and properties, along with exploring multiplication & division patterns. Scaled pictographs and bar graphs are covered as well, as they rely on multiplication & division to interpret.
Math Unit 4 Area & Perimeter	3.MD.5 - 8 3.G.1	3.OA.4 3.OA.5	Students explore area and perimeter concepts, as well as attributes of shapes, which they use to solve area and perimeter problems.
Science Unit 2 Life Cycles	3.LS1.1 3.LS3.1 3.LS3.2	n/a	Students observe and conclude that all living things follow typical life cycle pattern from birth and growth to reproduction and death. Students observe seeds germinating and research the similarities and differences of the life cycles of animals, specifically those that undergo metamorphosis. Along with the cause and effect structure of life cycles.
Math Unit 5 Fractions as Numbers	3.NF.1 - 3 3.G.2	3.MD.5	Students work to understand fractions as part of or all of a whole, making use of both shape models and quantities on a number line. Students make use of benchmark fractions to estimate size as well as to assist in comparisons. All fractions used in this unit are less than or equal to one whole.
Math Unit 6 Fraction Equivalency	3.NF.1 - 3 3.MD.4	3.G.2	Students focus on the idea of equivalence and equivalent fractions, learn about fractions greater than one whole, and represent measurement data using line plots. Comparison work continues, including mixed numbers and improper fractions, both representing fractions greater than one.
Science Unit 3 Motion and Matter	3.PS2.1 3.PS2.2 3.PS2.3 3.PS2.4	n/a	Magnetism and gravity are the forces students explore as they look for patterns of motion to predict future motion, e.g. with magnets and paper clips and wheel-and-axle systems. Students use their new understanding to knowledge of motion and matter to solve a design challenge.

**Grade 4 STEM SSM - 2017-18**

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Place Value, Addition & Subtraction	4.NBT.1 - 4	4.MD.1 4.MD.3	Students extend their understanding of place value to numbers within 1,000,000, as well as explore rounding to any place. They anchor their place value understandings around the relationship to the number 10, and master the addition & subtraction algorithm based on the base-10 system. Students also work on converting units of metric measurement as an application of their base-10 understanding.
Math Unit 2 Multiplication & Division	4.OA.1 4.NBT.5 4.NBT.6	4.OA.4 4.OA.5 4.MD.1 4.MD.3	Students explore multiplication as comparison, as well as continue building procedural fluency with multi-digit multiplication & division. Students work with factors and multiples, as well as prime & composite numbers. Students use multiplication & division to solve a variety of measurement problem, including conversion of standard units of measurement, and area & perimeter problems.
Science Unit 1 Energy Sources	4.PS3.1 4.PS3.3 4.PS3.4	4.PS3.2	Students learn about energy, potential and kinetic, as well as it the law of its conservation. Students apply their understanding of energy to design, test, and refine a device that transfers energy from one object to another. In addition to visual cues of kinetic energy (something moving), students will recognize that light, sound, heat, and electricity alert us that energy is present and (possibly) being transferred.
Math Unit 3 Fraction Equivalency	4.NF.1 4.NF.2	n/a	Students build deep understanding of fraction equivalency and ordering, generating equivalent fractions and using this as a strategy for comparison.
Math Unit 4 Fraction Operations	4.NF.3 4.NF.4	4.MD.2 - 4	Using their understanding of fraction equivalency, students begin to add fractions, as well as multiply fractions by whole numbers, which they understand as repeated addition of fractional parts. Students also make line plots with fractional scales.
Science Unit 2 Soils, Rocks, & Landforms	4.ESS2.1 4.ESS3.1	n/a	Students develop deeper understanding about earth materials, specifically their composition, erosion, and deposition. Investigations will provide students experiences to explain how landforms are created over long periods of time.
Math Unit 5 Decimal Fractions	4.NF.5 - 7	4.MD.2 4.MD.3	Students explore decimal fractions as a special type of fraction, learning about decimal notation, and performing operations and comparisons with decimal fractions.
Math Unit 6 Lines & Angles	4.MD.5 - 7 4.G.2 4.G.3	4.G.1	Students explore a variety of geometry and measurement concepts including, perpendicular and parallel lines, types of triangles, lines of symmetry and angle measurement.
Science Unit 3 External and Internal Systems	4.LS1.1 4.LS1.2	n/a	Building on understandings students gathered about energy systems, students will explore how internal and external structures support the survival, growth, behavior, and reproduction of animals. Specifically, students will recognize how information from an environment is transferred and responded to by the human body.

**Grade 5 STEM SSM - 2017-18**

Unit # & Title	Standards		Summary
	Major	Supporting	
Math Unit 1 Decimal Place Value, Addition & Subtraction	5.NBT.1 - 3 5.NBT.4 5.NBT.7	5.MD.1	Students deepen their grasp of our number system by increasing their knowledge of place value relationships. Students use exponents to represent powers of 10 and learn metric conversions in connection with place value relationships. Students also read, write, compare, round, add and subtract decimals to the thousandths place
Math Unit 2 Multiplication & Division	5.OA.1 5.OA.2 5.NBT.5 - 7	5.MD.1 5.NBT.1	Students will master the formal algorithm for multiplication and work with larger numbers in division. Multiplication and division of decimals is also practiced. Students will write and interpret numerical expressions, including grouping symbols, and work with word problems that focus on US customary/standard units, recognizing and emphasizing conversion factors other than 10.
Science Unit 1 Ecosystems	5.LS1.1 5.LS2.1 5.PS3.1	5.ESS2.1	Students learn about the movement of matter and energy among organisms in environments via food chains and webs. Students also recognize the interaction between the biosphere, geosphere, hydrosphere, and atmosphere.
Math Unit 3 Addition & Subtraction of Fractions	5.NF.1 5.MD.2	5.NF.2	Students formalize strategies for adding and subtracting fractions with unlike denominators. Students build and interpret line plots using fractional scales.
Math Unit 4 Multiplication & Division of Fractions	5.NBT.7 5.NF.3 - 5 5.NF.7	5.NF.6 5.MD.2	This unit focuses on multiplication and division of fractional units (in both fraction and decimal notation). Students learn to interpret fractions as division of the numerator by the denominator, as well as view multiplication as scaling. Work focuses on problems involving these computations, including those with area and line plots.
Science Unit 2 Earth & Sun	5.ESS1.1 5.ESS1.2	n/a	Students explore the relationship between the sun, stars, and the earth. Through observations of the sun and the moon, as well as shadows, along with demonstrations of how celestial bodies rotate and revolve, students will be able to visualize the makeup of our solar system.
Math Unit 5 Volume & Shapes	5.MD.3 - 5 5.G.3 5.G.4	5.NF.5 5.NF.6 5.MD.1	Volume is the focus of this unit, building on students' understanding of multiplication, division and area. Students build proficiency with name properties of shapes, allowing them to accurately place quadrilaterals in a hierarchy.
Math Unit 6 The Coordinate Plane	5.OA.3 5.G.1 5.G.2	5.NF.6 5.NF.7 5.MD.1	Students prepare for algebraic work by exploring patterns and relationships between numeric terms. Students also learn how to graphically represent relationships between numbers on the coordinate plane.
Science Unit 3 Structures & Properties of Matter	5.PS1.1 5.PS1.2	n/a	Students explore properties of matter, specifically that matter is made of particles that are too small to be seen. Students will also engage with the idea that matter is conserved, though it may change state or become part of a new substance.