South Carolina College- and Career-Ready Standards for Mathematics

Support Document

Grades K-5

K-5 Mathematics Support Document

As support for implementing the *South Carolina College- and Career-Ready Standards for Mathematics*, the standards for each grade K-5 have been grouped into possible units. In the *Table of Contents* below, the titles for those possible units are listed in a column under each grade. To see which standards are addressed in each unit and to read a brief description of the focus for each unit, click on the *Overview of Units* in the *Table of Contents*. As the units are updated, each unit title will be hyperlinked to the actual unit. In the meantime, the purpose of this document is to provide guidance as to how all the standards at each grade K-5 may be grouped into units. Since this document is merely guidance, districts should implement the standards in a manner that best meets the needs of students.

Acknowledgments

"Jean Baptiste Massieu, famous deaf educator, made a statement that is now considered a French proverb. *Gratitude is the memory of the heart.* Indeed, appreciation comes when you feel grateful from the depths of your heart. The head keeps an account of all the benefits you received and gave. But the heart records the feelings of appreciation, humility, and generosity that one feels when someone showers you with kindness." It is with sincere appreciation that we humbly acknowledge the dedication, hard work and generosity of time provided by the following individuals who are making the K-5 Mathematics Support Document possible. (http://quotations.about.com/od/ThankYou/a/Gratitude-Quotes.htm)

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	Overview of Units	**Overview of Units**	**Overview of Units**	**Overview of Units**	**Overview of Units**	**Overview of Units**
Unit 1	Counting and Cardinality	Composing and Decomposing Numbers Through 10	Place Value Concepts	Conceptual Understanding of Multiplication & Division	Place Value, Addition, & Subtraction with Whole Numbers	Expressions, Equations, & the Coordinate Plane
Unit 2	Understanding Relationship of Counting and Quantity	Addition and Subtraction Strategies	Developing Concepts Addition/ Subtraction	Place Value	Algebraic Thinking	Place Value
Unit 3	Count and Compare	Understanding Place Value	Fluency and Word Problems Addition/ Subtraction	Addition & Subtraction	Multiplication & Division of Whole Numbers	Operations with Whole and Decimal Numbers
Unit 4	Composing and Decomposing Numbers	Applying Place Value Concepts	Developing an Understanding of Multiplication	Application of Multiplication & Division	Fraction Equivalence	Adding and Subtracting Fractions
Unit 5	Addition and Subtraction	Comparisons and Data	Attributes Polygons and Fractional Parts	Conceptual Understanding of Fractions	Adding, Subtracting, & Multiplying with Fractions	Multiplying with Fractions
Unit 6	Patterns and Positions	Geometry and Equal Shares	Measurement Length	Data Analysis	Decimal Concepts	Dividing with Fractions
Unit 7	Two Dimensional and Three Dimensional Geometry	Measurement, Time, and Money	Measurement Time and Money	Identification and Classification of Geometric Shapes	Conversions & Problem Solving with Measurement	Classifying 2D Shapes
Unit 8	Foundations of Measurement		Creating and Understanding Data	Problem Solving with Measurement	Geometric Classifications & Line Symmetry	Perimeter, Area, and Volume
Unit 9	Understanding Graphs and Data			Fluency with Multiplication & Division	Angle Measurement	Converting Measurements within a Single System

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Kindergarten Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
Counting and Cardinality	**Understanding Relationship of Counting and Quantity**	**Count and Compare**	**Composing and Decomposing Numbers**	**Addition and Subtraction**	**Patterns and Positions**	**Two Dimensional and Three Dimensional Geometry**	**Foundations of Measurement**	**Understanding Graphs and Data**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
K.NS.1 K.NS.2 K.NS.3 **K.NS.4** K.NS.5 K.NS.6	K.NS.4 K.NS.5	K.NS.4 (c) K.NS.7 K.NS.8	K.NSBT.1 K.ATO.3	K.ATO.1 K.ATO.2 K.ATO.4 K.ATO.5	K.ATO.6 K.G.1	K.G.2 K.G.3 K.G.4 K.G.5	K.MDA.1 K.MDA.2	K.MDA.3 K.MDA.4
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
The focus of this unit is for students to understand the relationship between number and quantity. Students will understand that quantities can be counted, represented with a number name and a written numeral is a symbol representing that quantity.	The focus of this unit is for students to develop a sense of quantity and how numbers they count relate to one another. Students will begin to understand the reasonableness of answers, understanding the need to be consistent and accurate when counting.	The main focus of this unit is for students to apply their understandin g of counting and quantity to compare sets of objects and written numerals.	This unit focuses on developing the concepts of how numbers can be composed and decomposed in a variety of ways, forming a foundation for number sense in base ten.	The main focus is for students to build on composing and decomposing strategies which make sense to them to develop the conceptual understanding for the operations of addition and subtraction.	The main focus is for students to describe simple repeating patterns and positions of objects. Focus should include simple number patterns.	The main focus is on basic geometrical shapes. Students will develop an understanding of the attributes of 2-dimensional and 3-dimensional shapes. Students will apply number sense to reason about shapes in the environment.	The main focus is for students to develop a foundational understanding of length and weight measurement. This includes students developing the language needed to describe attributes, similarities and differences in the length and weight of a variety of objects.	The focus is for students to be given categories in which to sort and count objects. Students will then represent their findings in object and picture graphs to answer questions about the categories.

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Grade One Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
Composing & Decomposing Numbers through 10	**Addition and Subtraction Strategies**	**Understanding Place Value**	**Applying Place Value Concepts**	**Comparisons and Data**	**Geometry and Equal Shares**	**Measurement and Data**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
1.ATO.1 1.ATO.3 1.ATO.5 1.ATO.6 1.ATO.9.b 1.NSBT.1.a	1.ATO.1 1.ATO.2 1.ATO.3 1.ATO.4 1.ATO.6 1.ATO.7 1.ATO.8 1.NSBT.1.(a,c,d)	1.NSBT.1 1.NSBT.2 1.NSBT.3 1.NSBT.5 *1.ATO.3* *1.ATO.5* *1.ATO.6.* *1.ATO.8*	1.NSBT.4 1.NSBT.6 *1.ATO.1* *1.ATO.2* *1.ATO.3* *1.ATO.5* *1.ATO.6* *1.ATO.8*	1.MDA.4 1.MDA.5 1.ATO.1 1.ATO.2 1.ATO.9.b	1.G.1 1.G.2 1.G.3 1.G.4 1.ATO.9	1.MDA.1 1.MDA.2 1.MDA.3 1.MDA.6
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
Unit 1 will focus on number concepts and relations by composing and decomposing numbers through 10. Students will develop a beginning understanding of addition and subtraction.	*Unit 2* will focus on representing, solving, and exploring addition and subtraction. Students will extend their understanding of addition and subtraction from *Unit 1* to developing strategies for adding and subtracting whole numbers through 20. Students will have an understanding of subtraction as an unknown addend problem and determine missing numbers in addition and subtraction equations within 20 using a variety of strategies.	*Unit 3* will focus on developing an understanding of whole number relationships and place value through 99, including "making a ten". Students will develop an understanding of the relative magnitude of numbers by comparing two-digit numbers based on the meanings of the tens and ones. They will use that number sense to solve problems.	*Unit 4* will focus on students developing, discussing, and using efficient, accurate, and generalizable methods to add within 99 and to subtract multiples of 10.	*Unit* 5 will focus and build on the K concepts of sorting and classifying by collecting, organizing and representing data with up to 3 categories using object graphs, picture graphs, t-charts, and tallies. Students will ask/answer questions and draw conclusions based on given graphs (object graphs, picture graphs, t-charts, tallies, bar graphs). Building on Unit 3 comparison knowledge, students will develop comparison statements for a set of data and draw and solve comparison problems.	*Unit 6* will focus on students identifying, naming, partitioning, and reasoning about attributes of two-dimensional and three-dimensional shapes. Students will compose and decompose plane or solid figures (e.g., combine two triangles to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes.	*Unit 7* will focus on an understanding of the meaning and processes of measurement, including an understanding of linear measurement as iterating length units. Students will work with both analog and digital clocks as they tell and record time to the nearest hour and half hour. Students will also identify coins and their values.

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Grade Two Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Place Value Concepts	**Developing Concepts Addition/ Subtraction**	**Fluency and Word Problems Addition/ Subtraction**	**Developing an Understanding of Multiplication**	**Attributes Polygons and Fractional Parts**	**Measurement *Length***	**Measurement *Time and Money***	**Creating and Understanding Data**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
2.NSBT.1 2.NSBT.2 2.NSBT.3 2.NSBT.4 2.ATO.3	2.NSBT.5 2.NSBT.6 2.NSBT.7 2.NSBT.8 2.MDA.5	2.ATO.2 2.ATO.1 2.ATO.4	2.ATO.4 2.G.2	2.G.1 2.G.3	2.MDA.1 2.MDA.2 2.MDA.3 2.MDA.4	2.MDA.6 2.MDA.7	2.MDA.8 2.MDA.9 2.MDA. 10
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
Unit 1 will focus on the development of numeracy and place value concepts for the one's, ten's and hundred's places at a concrete (manipulative) level. Students will then use this conceptual understanding to 1) decompose numbers, 2) expand numbers, and 3) compare numbers.	After students have fully developed place value concepts, students will use those concepts in **Unit 2** to add and subtract four 2-digit numbers, and two 3 digit numbers (through 999). Students are expected to use place value strategies, concrete models, and properties of operations to develop their own strategies. Standard algorithms are not to be introduced at this early level of development.	In Unit 2, students developed models for addition and subtraction. **Unit 3** requires students to use those strategies to solve one and two step word problems and to demonstrate fluency with addition and subtraction through 20.	**Unit 4** requires students to begin the development of multiplication concepts (as repeated addition and as the area of a rectangular array). Students are not expected to use the multiplication sign (X). Students will instead use repeated addition equations. For example, 3+3+3+3+3=15	Students must be able to identify shapes based upon specified attributes (number of angles, number of equal faces)in **Unit 5.** They will also use the terms "halves" , "fourths", "half of" and "fourth of" to describe geometric shapes that have been equally divided. *Students are **not** expected to use the fractional symbols with numerators and denominators.*	In **Unit 6,** students will use rulers, yardsticks, meter sticks, and measuring tapes to: 1) measure the length of an object in customary and metric units, 2) compare the lengths of two measured objects, and 3) measure the same object using different units of measurements (feet vs. inches) and explain why the measurements differ.	**Unit 7** requires students to solve money story word problems in dollars, quarters, dimes, nickels, and pennies. Students must also be able to tell time to the nearest 5 minutes interval on analog clocks.	In previous Unit 6 students learned to measure length using measuring tools; in **Unit 8**, students will organize measurement data into line plots marked into whole number units. Students will also collect data to create, represent, and draw conclusions from picture graphs and bar graphs with a single unit scale.

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Grade Three Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
Conceptual Understanding of Multiplication & Division	**Place Value**	**Addition & Subtraction**	**Application of Multiplication & Division**	**Conceptual Understanding of Fractions**	**Data Analysis**	**Identification and Classification of Geometric Shapes**	**Problem Solving with Measurement**	**Fluency with Multiplication & Division**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
3.ATO.1 3.ATO.2 3.ATO.3 3.ATO.6	3.NSBT.1 3.NSBT.4 3.NSBT.5	3.NSBT.2 3.ATO.8 3.ATO.9	3.ATO.3 3.ATO.4 3.ATO.5 3.ATO.9	3.NSF.1 3.NSF.2 3.NSF.3 3.G.2	3.MDA.3 3.MDA.4	3.G.1 3.G.3 3.G.4	3.MDA.1 3.MDA.2 3.MDA.5 3.MDA.6 3.ATO.8	3.NSBT.3 3.ATO.7 3.ATO.8
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
To develop conceptual understanding, students use concrete objects, drawings and symbols to represent multiplication and division facts and then solve real-world problems.	Students use place value understanding to read, write, round, compare, and order numbers.	Students develop fluency with addition and subtraction of whole numbers through 1,000, and apply these skills in real-world problems.	Building on conceptual understanding from Unit 1 and now with a focus on application, students continue working with multiplication and division facts in a variety of problem solving situations.	Students begin to build fraction sense, working with a variety of models to emphasize unit fractions and explore fraction equivalence.	Students extend their understanding of data analysis to include scaled picture and bar graphs, as well as line plots.	Students continue working with 2-D shapes, categorizing by attributes. Students also identify 3-D shapes based on given 2-D nets.	Students solve real-world problems involving a variety of measurement concepts.	Students apply a variety of strategies to demonstrate fluency and solve real-world problems with multiplication and division facts.

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Grade Four Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
Place Value, Addition, & Subtraction of Whole Numbers	**Algebraic Thinking**	**Multiplication & Division of Whole Numbers**	**Fraction Equivalence**	**Adding, Subtracting, & Multiplying with Fractions**	**Decimal Concepts**	**Conversions & Problem Solving with Measurement**	**Geometric Classifications & Line Symmetry**	**Angle Measurement**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
4.NSBT.1 4.NSBT.2 4.NSBT.3 4.NSBT.4	4.ATO.1 4.ATO.2 4.ATO.3 4.ATO.4 4.ATO.5	4.NSBT.5 4.NSBT.6 4.ATO.3 4.ATO.5	4.NSF.1 4.NSF.2 4.NSF.5	4.NSF.3 4.NSF.4 4.NSF.5 4.MDA.4	4.NSF.6 4.NSF.7	4.MDA.1 4.MDA.2 4.MDA.3 4.MDA.8	4.G.1 4.G.2 4.G.3 4.G.4 4.ATO.5	4.MDA.5 4.MDA.6 4.MDA.7
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
Students examine the structure and patterns within the base ten system. They then use this knowledge to develop fluency with addition and subtraction of whole numbers.	To extend algebraic reasoning, students employ flexible thinking with multiplication and division to solve a variety of real-world problems.	Students employ a variety of strategies to efficiently multiply and divide multi-digit numbers.	Students strengthen their fraction sense by using a variety of models and strategies, such as the multiplicative identity element in fraction form, to generate and compare equivalent fractions.	Students use a variety of models when adding and subtracting fractions with like denominators and when multiplying a whole number and a fraction to solve real-world problems.	Students write decimals as fractions and use concrete and visual models to compare and order decimal numbers.	Students convert measurements within a single system and solve real-world problems involving a variety of measurement concepts.	Students learn specific geometric attributes, such as parallel and perpendicular lines, and use those attributes to classify shapes. The concept of line symmetry is introduced.	Students create and measure angles using a protractor. They also solve real-world problems involving unknown angle measures.

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Grade Five Overview of Units

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Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
Expressions, Equations, and the Coordinate Plane	**Place Value**	**Operations with Whole and Decimal Numbers**	**Adding and Subtracting Fractions**	**Multiplying with Fractions**	**Dividing with Fractions**	**Classifying 2D Shapes**	**Perimeter, Area, and Volume**	**Converting Measurements within a Single System**
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**
5.ATO.1 5.ATO.2 5.ATO.3 5.G.1 5.G.2	5.NSBT.1 5.NSBT.2 5.NSBT.3 5.NSBT.4	5.NSBT.5 5.NSBT.6 5.NSBT.7	5.NSF.1 5.NSF.2 5.MDA.2	5.NSF.4 5.NSF.5 5.NSF.6 5.MDA.2	5.NSF.3 5.NSF.7 5.NSF.8	5.G.3 5.G.4	5.MDA.3 5.MDA.4	5.MDA.1
Unit Focus	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**	**Unit Focus**
Students expand their ability to evaluate numerical expressions that include grouping symbols. Students connect their understanding of numerical expressions to the coordinate plane.	Students work with powers of 10 to extend place value understanding of whole and decimal numbers through thousandths.	Students develop fluency with multiplication and division of multi-digit whole numbers. Students also develop conceptual understanding of operations with decimal numbers.	Students use a variety of models when adding and subtracting fractions with unlike denominators to solve real-world problems.	Students extend their understanding of fractions by multiplying with fractions in a variety of situations to solve real-world problems.	Students divide unit fractions and whole numbers using a variety of models to solve real-world problems.	Students culminate their understanding of two-dimensional figures by classifying them in a hierarchy based on their attributes.	Students investigate volume measurement from concrete exploration to derivation of the formula for right rectangular prisms. Students then differentiate among perimeter, area, and volume when solving real-world problems.	Students convert measurements within a single system by applying operational fluency in problem solving situations.

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