



Common Core State Standards At-a-Glance Transition Documents Second Grade

S²TEM Centers SC
www.s2temsc.org

S²TEM Centers SC are a statewide system of support for improving instruction and increasing student achievement in mathematics and science. S²TEM Centers SC, like S²MART Centers before them, are an initiative of South Carolina's Coalition for Mathematics and Science. The S²TEM Centers SC seek to work collaboratively with STEM-oriented partners in education, business and government.



Preface

The S²TEM Centers SC At-a-Glance Transition Documents were created in response to a request by district leaders for a quick overview of the magnitude of the changes as South Carolina moves from the 2007 SC Academic Standards for Mathematics to the Common Core State Standards for Mathematics (CCSSM). These documents do not provide a detailed analysis of the CCSSM or include all of the sub-skills that might need to be taught to ensure mastery of the standard, nor do they replace the current Support Documents for Mathematics that is available for Kindergarten through Algebra 1. More robust instructional resources will be created as SC gets closer to full implementation of the CCSSM.

In addition to the S²TEM Centers SC At-a-Glance Transition Documents, educators should have copies of the CCSSM from www.corestandards.org, as well as the appendices that accompany the standards. Specifically, K-8 educators will need access to the CCSSM glossary which includes tables 1, 2, and 3 to completely understand the intent of the standards.

The format of the documents is:

- Bulleted list of content that is new to the given grade level
- Bulleted list of content that is no longer included in the standards for the given grade level
- Four column table showing: Common Core State Standard, Understanding CCSS: Notes and Examples, 2007 SC Academic Standard, Major Changes

Throughout this document, the Common Core State Standards are identified by grade level, domain, and standard number. So, for example, 3.NBT.2 refers to the 3rd grade Number and Operations in Base Ten standard #2.

Please note: The CCSSM identifies a list of 8 Standards for Mathematical Practice in addition to the content standards for each grade. These mathematical practices are similar to NCTM's Process Standards. The Standards for Mathematical Practice identify the "habits of mind" used by proficient mathematics students. They are: (1) Make sense of problems and persevere in solving them, (2) Reason abstractly and quantitatively, (3) Construct viable arguments and critique the reasoning of others, (4) Model with mathematics, (5) Use appropriate tools strategically, (6) Attend to precision, (7) Look for and make use of structure, (8) Look for and express regularity in repeated reasoning.

As with any curriculum document, the S²TEM Center SC At-a-Glance Transition Documents are updated regularly to ensure accuracy of information. The date of the most recent edits is noted in the footer on each page of the documents. Please contact the S²TEM Centers SC CCSSM team at ccss.s2temsc@gmail.com with edits, refinements, and questions. Thank you.

During the period of July 1, 2009 to June 30, 2011, S2TEM Centers SC operated as S2MART Centers SC.

Copyright 2011 S²TEM Centers SC

www.s2temsc.org

revised 07/22/2011

Acknowledgements

S²TEM Centers SC CCSSM Team

Terrie R. Dew, Mathematics Instructional Specialist
S²TEM Centers SC

Jeannie Martin, Mathematics Instructional Specialist
S²TEM Centers SC

Leigh Haltiwanger, Mathematics Instructional Specialist
S²TEM Centers SC

Kim Poston, Mathematics Instructional Specialist
S²TEM Centers SC

The S²TEM Centers SC CCSSM Team would like to thank the members of SCLME who volunteered their time to assist with the review, editing and refinement of the At-a-Glance Transition Documents.

S²TEM Centers SC At-a-Glance Transition Documents Review Team

Dian Alston, Instructional Specialist Elementary Mathematics
Lexington-Richland School District Five

Rita Bixler, Secondary Mathematics Consultant
Greenville County Schools

Dorothy Earle, Mathematics Instructional Specialist
S²TEM Centers SC

Cathy Hale, Elementary Mathematics Consultant
Greenville County Schools

Kathryn Jackson, Mathematics Coach
Chesterfield County School District

Sue Phillips, Mathematics Instructional Specialist
S²TEM Centers SC

Pamela Smith, Curriculum Specialist
Dorchester County School District Four

Rhonda Willis, Curriculum Facilitator
Hampton County School District One

*Copyright 2011 S²TEM Centers SC
www.s2temsc.org
revised 07/22/2011*

Sandra Avinger, Secondary Mathematics Consultant
Richland County School District One

Colleen Boissinot, K-12 Mathematics Coordinator
Lexington-Richland School District Five

Ellen Fender, District Instructional Facilitator
Colleton County School District

Beth Hough, School Improvement Facilitator
Chesterfield County School District

Carla King, Mathematics Coordinator
Sumter County School District Two

Christie Reid, Math Instructional Supervisor prek-12
Clover School District

Martha Taylor, Math/Science Coordinator
Darlington County School District

Grade 2 Overview

“In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.” *Common Core State Standards for Mathematics*

Operations and Algebraic Thinking (2.OA)

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten (2.NBT)

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data (2.MD)

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

Geometry (2.G)

- Reason with shapes and their attributes..

Common Core State Standards Initiative. (2010). Common Core State Standards for Mathematics. Washington, DC: National Governors Association Center for Best Practices and the Council of Chief State School Officers.

SECOND GRADE CHANGES AT-A-GLANCE

What content is NEW to 2nd Grade?

- Fluently add and subtract within 20. By the end of Grade 2, know from memory all sums of two one-digit numbers. (2.OA.2)
- Determine whether a group of objects has an odd or even number of members. (2.OA.3)
- Add up to four two-digit numbers using strategies based on place value and properties of operations. (2.NBT.6)
- Mentally add 10 or 100 to a given number and mentally subtract 10 or 100 from a given number. (2.NBT.8)
- Explain why addition and subtraction strategies work. (2.NBT.9)
- Estimate lengths to the nearest inch and meter. (2.MD.3)
- Measure to determine how much longer one object is than another. (2.MD.4)
- Relate addition and subtraction to length. (2.MD.5)
- Represent whole numbers on a number line. (2.MD.6)
- Represent measurement data on a line plot. (2.MD.9)
- Recognize and draw shapes having specified attributes. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (2.G.1)
- Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. (2.G.2)

Note: The Common Core State Standards are identified by grade level, domain, and standard number. So, for example, 2.OA.2 refers to the 2ND grade Operations and Algebraic Thinking standard #2.

SECOND GRADE CHANGES AT-A-GLANCE

What content will no longer be included in the 2nd Grade Standards?*

- Generate estimation strategies to determine the approximate number of objects in a set of no more than 1,000 objects. (2-2.1)
- Interpret models of sharing equally (division) as repeated subtraction and arrays. (2-2.6)
- Generate strategies to round numbers through 90 to the nearest 10. (2-2.9)
- Identify quantitative and qualitative change over time. (2-3.4)
- Analyze quantitative and qualitative change over time. (2-3.5)
- Analyze the three dimensional shapes spheres, cubes, cylinders, prisms, pyramids, and cones according to the number and shape of the faces, edges, corners, and bases of each. (2-4.1)
- Identify multiple lines of symmetry. (2-4.2)
- Use coins to make change up to a dollar. (2-5.2)
- Measuring volume, weight, and temperature. (2-5.3)
- Measuring length in yards. (2-5.4)
- Create survey questions to collect data. (2-6.1)
- Infer trends in a data set as increasing, decreasing, or random. (2-6.3)
- Predict on the basis of data whether events are more likely or less likely to occur. (2-6.4)

***Note: Common Core standards implementation will begin in 2010-2011, with full implementation and assessment in 2014-2015.**

SECOND GRADE

OPERATIONS AND ALGEBRAIC THINKING (OA)

Common Core State Standards	Understanding CCSS: Notes and Examples	2007 S.C. Academic Standards for Mathematics	Major Changes
2.OA – Represent and solve problems involving addition and subtraction.			
<p>1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.</p>	<p>e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p>Note: See CCSS Glossary, Table 1</p> <p>Note: Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)</p>	<p>2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.</p> <p>2-2.8 Generate addition and subtraction strategies to find missing addends and subtrahends in number combinations through 20.</p>	<p>Extend to include number combinations beyond 20 with sums of maximum 100.</p>
2.OA – Add and subtract within 20.			
<p>2. Fluently add and subtract within 20. By end of Grade 2, know from memory all sums of two one-digit numbers.</p>	<p>Note: Use strategies such as:</p> <ul style="list-style-type: none"> • counting on; • making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); • decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); • using the relationship between 		<p>This standard is new to 2nd Grade. (See 2007 1-2.6 for reference.)</p> <p><u>Vertical Articulation Note:</u></p> <p>In Kindergarten, students learn to fluently add and subtract within 5 (maximum sum = 5). In 1st grade,</p>

	<p>addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and</p> <ul style="list-style-type: none"> • creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$). 		<p>students learn to fluently add and subtract within 10 (maximum sum = 10).</p>
<p>2.OA – Work with equal groups of objects to gain foundations for multiplication.</p>			
<p>3. Determine whether a group of objects (up to 20) has an odd or even number of members. Write an equation to express an even number as a sum of two equal addends.</p>	<p>e.g., by pairing objects or counting them by 2s</p>		<p>This standard is new to 2nd Grade. (See 2007 1-3.5 for reference.)</p>
<p>4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</p>		<p>2-2.5 Interpret models of equal grouping (multiplication) as repeated addition and arrays.</p>	<p>None Noted.</p>

SECOND GRADE

NUMBER AND OPERATIONS IN BASE TEN (NBT)

Common Core State Standards	Understanding CCSS: Notes and Examples	2007 S.C. Academic Standards for Mathematics	Major Changes
2.NBT – Understand place value.			
<p>1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.</p>	<p>e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens — called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).</p>	<p>2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.</p>	<p>Continue to teach with the exception of four digit numbers (i.e. numbers through 999 only.)</p>
<p>2. Count within 1000; skip-count by 5s, 10s, and 100s.</p>		<p>2-3.1 Analyze numeric patterns in skip counting that use the numerals 1 through 10.</p>	<p>Extend to include skip counting by 100s.</p>
<p>3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.</p>		<p>2-2.2 Represent quantities in word form through <i>twenty</i>. 2-2.3 Represent multiples of ten in word form through <i>ninety</i>. 2-2.10 Analyze the magnitude of digits through 9,999 on the basis of</p>	<p>Extend to include numbers through 1000.</p>

		their place values.	
4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.		2-2.4 Compare whole-number quantities through 999 by using the terms <i>is less than</i> , <i>is greater than</i> , and <i>is equal to</i> and the symbols $<$, $>$, and $=$.	None noted.
2.NBT – Use place value understanding and properties of operations to add and subtract.			
5. Fluently add and subtract within 100.	Use strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.	Extend beyond generating strategies to include using strategies fluently.
6. Add up to four two-digit numbers.	Use strategies based on place value and properties of operations.		This standard is new to 2 nd grade. (See 2007 3-2.3 for reference.)
7. Add and subtract within 1000. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.	2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.	Extend to include adding and subtracting pairs of three-digit numbers using concrete models.
8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.			This standard is new to 2 nd Grade.
9. Explain why addition and subtraction strategies work, using	Note: Explanations may be supported by drawings or objects.		This standard is new to 2 nd Grade.

place value and the properties of operations.			
---	--	--	--

SECOND GRADE

MEASUREMENT AND DATA (MD)

Common Core State Standards	Understanding CCSS: Notes and Examples	2007 S.C. Academic Standards for Mathematics	Major Changes
2.MD – Measure and estimate length in standard units.			
1. Measure the length of an object by selecting and using appropriate tools.	Tools such as rulers, yardsticks, meter sticks, and measuring tapes.	2-5.3 Use appropriate tools to measure objects to the nearest whole unit: measuring length in centimeters, feet, and yards; measuring liquid volume in cups, quarts, and gallons; measuring weight in ounces and pounds; and measuring temperature on Celsius and Fahrenheit thermometers.	Continue to teach with the exception of volume, weight, and temperature. The standard specifies length only.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	<i>Editorial Clarification: This means measure the same object with different units, (i.e. measure in feet, then measure in inches) and compare the magnitude of the measures based on the size of the unit.</i>	2-5.6 Predict whether the measurement will be greater or smaller when different units are used to measure the same object.	None noted.
3. Estimate lengths.	Use units of inches, feet, centimeters, and meters.	2-5.4 Generate common measurement referents for feet, yards, and centimeters.	Continue to teach with the exception of yard. Extend to include inch and meter.

		2-5.5 Use common measurement referents to make estimates in feet, yards, and centimeters.	
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.			This standard is new to 2 nd Grade.
2.MD – Relate addition and subtraction to length.			
5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units.	e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.		This standard is new to 2 nd Grade.
6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences on a number line diagram.	Only whole numbers using a <u>number line</u> .		This standard is new to 2 nd Grade.
2.MD – Work with time and money.			
7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.		2-5.7 Use analog and digital clocks to tell and record time to the nearest quarter hour and to the nearest five-minute interval. 2-5.8 Match <i>a.m.</i> and <i>p.m.</i> to familiar situations.	Continue to teach with the exception of quarter-hour.

8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.	Example: If you have 2 dimes and 3 pennies, how many cents do you have?	2-5.1 Use a counting procedure to determine the value of a collection of coins and bills.	Extend to include word problems. Note: This is the first time students use money skills in a math classroom.
2.MD – Represent and interpret data			
9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object.	Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.		This standard is new to 2 nd Grade. (See 2007 3-6.2 for examples of line plots.)
10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.		2-6.2 Organize data in charts, pictographs, and tables.	Extend to include bar graphs.

SECOND GRADE

GEOMETRY (G)

Common Core State Standards	Understanding CCSS: Notes and Examples	2007 S.C. Academic Standards for Mathematics	Major Changes
2.G – Reason with shapes and their attributes			
1. Recognize and draw shapes having specified attributes. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Attributes such as a given number of angles or a given number of equal faces. Note: Sizes are compared directly or visually, not compared by measuring.		This standard is new to 2 nd Grade.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.			This standard is new to 2 nd Grade. Note: The purpose of this standard is to prepare students for area concepts.
3. Partition circles and rectangles into two, three, or four equal shares.	Describe the shares using the words <i>halves</i> , <i>thirds</i> , <i>half of</i> , <i>a third of</i> , etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	2-4.3 Predict the results of combining and subdividing polygons and circles.	Extend to include language “ <i>halves</i> ”, “ <i>thirds</i> ”, “ <i>half of</i> ”, “ <i>a third of</i> ”, etc.