Math Out of the Box Correlation
to
South Carolina Academic Standards
for
Mathematics – 2007

Second Grade
Developing Number Concepts: More and Less
Module A

Students represent basic addition and subtraction facts with models, in number sentences, and from memory. The system of tens is explored through rounding, patterns, and place value. Estimates are analyzed for reasonableness, ordinal and cardinal numbers are compared, and real-life problem situations are investigated. Manipulatives such as collections, connecting cubes, and counters are included. A Student Record Book supports the lessons.

This correlation was developed by the Math Out of the Box Staff.

Send email to mootb@clemson.edu with questions and comments.

Correlation Information

The purpose of this document is to provide a correlation of Math Out of the Box lessons to the South Carolina Academic Standards for Mathematics, 2007. These correlations are intended to aid classroom teachers with lesson planning, schools with vertical planning, and districts with curriculum planning.

The correlation document is arranged in the following order:

Process Standards
Process standards that are used in the lessons of the subconcept to develop conceptual understanding of mathematics are listed in this column. It is recommended that one process standard be selected for formative assessment in each subconcept.

Content Standards
The content standards listed in this column are those that are addressed in one or more of the phases of the learning cycle in the listed lessons. Standards are connected by subconcept because conceptual knowledge is built in sets of lessons in the Math Out of the Box curriculum. These subconcepts are connected to a big idea of mathematics. The first lesson of a subconcept is an embedded pre-assessment, connecting to prior learning. The final lesson in a subconcept is designed to be formative and summative.

Horizontal Connections
Connections to mathematics standards in other strands are listed here to show the horizontal weave of the Math Out of the Box curriculum. These connections provide opportunities for the development of connections between mathematical concepts, maintenance of skills, and additional practice.

Vertical Connections
Foundation standards show the vertical articulation of the lessons. At times, an investigation is planned in a lesson to specifically build a foundation for the standards in the next grade or grades. These lessons, or parts of lessons, are essential so that concepts are connected from grade to grade.

Cross Curricular Connections
Connections to standards from other subject areas are listed to aid in cross curricular integration and the development of curriculum maps.

Big Idea: Representation of numbers can be used to describe and learn about the world around us.
Subconcept: Addition facts can be analyzed for patterns using a variety of representations.
Lessons 1, 2, 3, 4, 5
Focus Question: What strategies can be used to memorize addition facts?

Process Standards	Content Standards	Horizontal Connections
Mathematics **Standard 2-1 (Process):** The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **Indicators** 2-1.1 Apply substantive mathematical problem-solving strategies. 2-1.2 Generate conjectures and exchange mathematical ideas. 2-1.3 Explain and justify answers to simple problems. 2-1.4 Analyze patterns by reasoning systematically. 2-1.5 Generalize mathematical concepts. 2-1.6 Use a variety of forms of mathematical communication. 2-1.7 Generalize connections among mathematics, the environment, and other subjects. 2-1.8 Use multiple informal representations to convey mathematical ideas.	**Mathematics** **Standard 2.2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of the base- ten numeration system: place values: and accurate, efficient, and generalizable methods of adding and subtracting whole numbers. **Indicators** 2-2.2 Represent quantities in word form through twenty. 2-2.8 Generate addition and subtraction strategies to find missing addends and subtrahends in number combinations through 20.	**Mathematics** **Standard 2-3 (Algebra):** The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change. **Indicators** 2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10. **Standard 2-6 (Data Analysis and Probability):** The student will demonstrate through the mathematical processes an understanding of creating questions to collect data, organizing data, describing trends of a data set and making predictions based on data. **Indicators** 2-6.2 Organize data in charts, pictographs, and tables.

Notes:

Vertical Connections	Cross Curricular Connections
Grade 3 **Standard 3-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts. **Indicators** 3-2.3 Apply an algorithm to add and subtract whole numbers fluently. 3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome. **Grade 4** **Standard 4-2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationships between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals. **Indicators** 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions. 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value. **Grade 5** **Standard 5-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions. **Indicators** 5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths. 5-2.5 Apply an algorithm to add and subtract decimals through thousandths. 5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.	**Language Arts** **Standard 2-2 (Reading):** The student will read and comprehend a variety of texts in print and nonprint formats. **Indicators** 2-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations. 2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information. **Standard 2-4 (Writing):** The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English. **Indicators** 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models. 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing. 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words. 2-4.4 Use the conventions of written Standard American English (including those regarding personal pronouns and the distinction between common and proper nouns and singular and plural noun forms.) 2-4.7 Use appropriate spacing between words when writing on a page. 2-4.8 Use correct letter formation when using manuscript or cursive writing. **Science** **Standard 2-1 (Scientific Inquiry):** The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation. **Indicators** 2-1.3 Represent and communicate simple data and explanation through drawings, tables, pictographs, bar graphs, and oral and written language.

Notes:

Big Idea: Representation of numbers can be used to describe and learn about the world around us.
Subconcept: Subtraction facts can be analyzed for patterns using a variety of representations.
Lessons 6, 7, 8, 9, 10
Focus Question: What strategies can be used to memorize subtraction facts?

Process Standards	Content Standards	Horizontal Connections
Mathematics **Standard 2-1 (Process):** The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **Indicators** 2-1.1 Apply substantive mathematical problem-solving strategies. 2-1.2 Generate conjectures and exchange mathematical ideas. 2-1.3 Explain and justify answers to simple problems. 2-1.4 Analyze patterns by reasoning systematically. 2-1.5 Generalize mathematical concepts. 2-1.6 Use a variety of forms of mathematical communication. 2-1.7 Generalize connections among mathematics, the environment, and other subjects. 2-1.8 Use multiple informal representations to convey mathematical ideas.	**Mathematics** **Standard 2.2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of the base- ten numeration system: place values: and accurate, efficient, and generalizable methods of adding and subtracting whole numbers. **Indicators** 2-2.2 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping. 2-2.8 Generate addition and subtraction strategies to find missing addends and subtrahends in number combinations through 20.	**Mathematics** **Standard 2-3 (Algebra):** The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change. **Indicators** 2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10. **Standard 2-6 (Data Analysis and Probability):** The student will demonstrate through the mathematical processes an understanding of creating questions to collect data, organizing data, describing trends of a data set and making predictions based on data. **Indicators** 2-6.2 Organize data in charts, pictographs, and tables.

Notes:

Vertical Connections	Cross Curricular Connections
Grade 3 **Standard 3-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts. **Indicators** 3-2.3 Apply an algorithm to add and subtract whole numbers fluently. 3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome. **Grade 4** **Standard 4-2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationships between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals. **Indicators** 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions. 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value. **Grade 5** **Standard 5-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions. **Indicators** 5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths. 5-2.5 Apply an algorithm to add and subtract decimals through thousandths. 5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.	**Language Arts** **Standard 2-2 (Reading):** The student will read and comprehend a variety of texts in print and nonprint formats. **Indicators** 2-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations. 2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information. **Standard 2-4 (Writing):** The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English. **Indicators** 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models. 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing. 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words. 2-4.4 Use the conventions of written Standard American English (including those regarding personal pronouns and the distinction between common and proper nouns and singular and plural noun forms.) 2-4.7 Use appropriate spacing between words when writing on a page. 2-4.8 Use correct letter formation when using manuscript or cursive writing. **Science** **Standard 2-1 (Scientific Inquiry):** The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation. **Indicators** 2-1.4 Represent and communicate simple data and explanation through drawings, tables, pictographs, bar graphs, and oral and written language.

Notes:

Big Idea: Representation of numbers can be used to describe and learn about the world around us.
Subconcept: The base-10 numbers system and its place-value structure can be analyzed for patterns using a variety of representations.
Lessons 11, 12, 13, 14, 15, 16
Focus Question: What patterns can be described in the base-10, place-value system?

Process Standards	Content Standards	Horizontal Connections
Mathematics **Standard 2-1 (Process):** The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **Indicators** 2-1.1 Apply substantive mathematical problem-solving strategies. 2-1.2 Generate conjectures and exchange mathematical ideas. 2-1.3 Explain and justify answers to simple problems. 2-1.4 Analyze patterns by reasoning systematically. 2-1.5 Generalize mathematical concepts. 2-1.6 Use a variety of forms of mathematical communication. 2-1.7 Generalize connections among mathematics, the environment, and other subjects. 2-1.8 Use multiple informal representations to convey mathematical ideas.	**Mathematics** **Standard 2.2 (Numbers and Operations)**: The student will demonstrate through the mathematical processes an understanding of the base- ten numeration system: place values: and accurate, efficient, and generalizable methods of adding and subtracting whole numbers. **Indicators** 2-2.2 Represent quantities in word form through *twenty*. 2-2.3 Represent multiples of ten in word form through *ninety*. 2-2.4 Compare whole-number quantities through 999 by using the terms *is less than, is greater than,* and *is equal to* and the symbols <, >, and =. 2-2.9 Generate strategies to round numbers through 90 to the nearest 10. 2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.	**Mathematics** **Standard 2-3 (Algebra):** The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change. **Indicators** 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.

Notes:

Vertical Connections	Cross Curricular Connections
Grade 3 **Standard 3-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts. **Indicators** 3-2.1 Compare whole-number quantities through 999,999 by using the terms *is less than, is greater than,* and *is equal to* and the symbols <, >, and =. 3-2.2 Represent in word form whole numbers through *nine hundred ninety-nine thousand.* 3-2.4 Apply procedures to round any whole number to the nearest 10, 100, or 1,000. 3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value. **Grade 4** **Standard 4-2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationships between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals. **Indicators** 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions. 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value. 4-2.7 Compare decimals through hundredths by using the terms *is less than, is greater than,* and *is equal to* and the symbols <, >, and =. **Grade 5** **Standard 5-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions. **Indicators** 5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths. 5-2.4 Compare whole numbers, decimals, and fractions by using the symbols <, >, and =.	**Language Arts** **Standard 2-2 (Reading):** The student will read and comprehend a variety of texts in print and nonprint formats. **Indicators** 2-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations. 2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information. **Standard 2-4 (Writing):** The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English. **Indicators** 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models. 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing. 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words. 2-4.4 Use the conventions of written Standard American English (including those regarding personal pronouns and the distinction between common and proper nouns and singular and plural noun forms.) 2-4.7 Use appropriate spacing between words when writing on a page. 2-4.8 Use correct letter formation when using manuscript or cursive writing. **Standard 2-6 (Researching):** The student will access and use information from a variety of sources. **Indicators** 2-6.2 Use a variety of print sources such as books, pictures, charts, graphs, diagrams, and picture dictionaries and nonprint media to access information. 2-6.6 Understand and follow multistep direction. **Science** **Standard 2-1 (Scientific Inquiry):** The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation. **Indicators** 2-1.5 Represent and communicate simple data and explanation through drawings, tables, pictographs, bar graphs, and oral and written language.

Big Idea: Representation of numbers can be used to describe and learn about the world around us.
Subconcept: Meaning for addition and subtraction can be developed by constructing a variety of models and strategies.
Lessons 17, 18, 19, 20, 21, 22
Focus Question: What strategies can be used to solve addition and subtraction problems?

Process Standards	Content Standards	Horizontal Connections
Mathematics **Standard 2-1 (Process):** The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **Indicators** 2-1.1 Apply substantive mathematical problem-solving strategies. 2-1.2 Generate conjectures and exchange mathematical ideas. 2-1.3 Explain and justify answers to simple problems. 2-1.4 Analyze patterns by reasoning systematically. 2-1.5 Generalize mathematical concepts. 2-1.6 Use a variety of forms of mathematical communication. 2-1.7 Generalize connections among mathematics, the environment, and other subjects. 2-1.8 Use multiple informal representations to convey mathematical ideas.	**Mathematics** **Standard 2.2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of the base- ten numeration system: place values: and accurate, efficient, and generalizable methods of adding and subtracting whole numbers. **Indicators** 2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping. 2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.	**Mathematics** **Standard 2-3 (Algebra):** The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change. **Indicators** 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.

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Grade 3 **Standard 3-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts. **Indicators** 3-2.3 Apply an algorithm to add and subtract whole numbers fluently. 3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome. **Grade 4** **Standard 4-2 (Numbers and Operations):** The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationships between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals. **Indicators** 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions. 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value. **Grade 5** **Standard 5-2 (Number and Operations):** The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions. **Indicators** 5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths. 5-2.5 Apply an algorithm to add and subtract decimals through thousandths. 5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.	**Language Arts** **Standard 2-2 (Reading):** The student will read and comprehend a variety of texts in print and nonprint formats. **Indicators** 2-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations. 2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information. **Standard 2-4 (Writing):** The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English. **Indicators** 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models. 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing. 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words. 2-4.4 Use the conventions of written Standard American English (including those regarding personal pronouns and the distinction between common and proper nouns and singular and plural noun forms.) 2-4.7 Use appropriate spacing between words when writing on a page. 2-4.8 Use correct letter formation when using manuscript or cursive writing. **Science** **Standard 2-1 (Scientific Inquiry):** The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation. **Indicators** Represent and communicate simple data and explanation through drawings, tables, pictographs, bar graphs, and oral and written language.

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