

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

**Second Grade
Developing Number Concepts: More and Less
Module B**

Students explore estimation and build models to represent multiplication and division. Addition and subtraction problems are solved with and without regrouping. Number properties, fractions, and probability are explored. Spinners, fractional shapes, and number charts are included in the kit. A Student Record Book supports the lessons by providing reflective practice and connections between mathematical concepts.

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

Send email to mootb@clmson.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: Estimation strategies can be used to analyze sets.

Lessons 1, 2, 3

Focus Question: What strategies can be used to estimate the number of objects in a set?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 2-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <p>2-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>2-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>2-1.3 Explain and justify answers to simple problems.</p> <p>2-1.4 Analyze patterns by reasoning systematically.</p> <p>2-1.5 Generalize mathematical concepts.</p> <p>2-1.6 Use a variety of forms of mathematical communication.</p> <p>2-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>2-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>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.</p> <p>Indicators</p> <p>2-2.1 Generate estimation strategies to determine the approximate number of objects in a set of no more than 1,000 objects.</p> <p>2-2.9 Generate strategies to round numbers through 90 to the nearest 10.</p>	<p>Mathematics Standard 2-3 (Algebra) : The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> <p>Indicators</p> <p>2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.</p> <p>2-3.2 Translate patterns into rules for simple multiples.</p> <p>2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 3 Standard 3-2 (Numbers 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.</p> <p>Indicators 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</p> <p>Grade 4 Standard 4-2 (Number 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.</p> <p>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. 4-2.12 Generate strategies to add and subtract decimals through hundredths.</p> <p>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.</p> <p>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 $=$.</p>	<p>Language Arts 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.</p> <p>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.</p> <p>Standard 2-6 (Researching): The student will access and use information from a variety of sources.</p> <p>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.</p>



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 4, 5, 6, 7, 8, 9, 10

Focus Question: What strategies can be used to add and subtract numbers with regrouping?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 2-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <p>2-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>2-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>2-1.3 Explain and justify answers to simple problems.</p> <p>2-1.4 Analyze patterns by reasoning systematically.</p> <p>2-1.5 Generalize mathematical concepts.</p> <p>2-1.6 Use a variety of forms of mathematical communication.</p> <p>2-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>2-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>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.</p> <p>Indicators</p> <p>2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.</p> <p>2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.</p>	<p>Mathematics Standard 2-3 (Algebra) The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> <p>Indicators</p> <p>2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.</p> <p>2-3.2 Translate patterns into rules for simple multiples.</p> <p>2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p> <p>Mathematics Standard 2-5. (Measurement) The student will demonstrate through the mathematical processes an understanding of the value of combinations of coins and bills and the measurement of length, weight, time, and temperature.</p> <p>Indicators</p> <p>2-5.4 Generate common measurement referents for feet, yards, and centimeters.</p> <p>2-5.5 Use common measurement referents to make estimates in feet, yards, and centimeters.</p> <p>2-5.6 Predict whether the measurement will be greater or smaller when different units are used to measure the same object.</p> <p>2-5.9 Recall equivalencies associated with length and time: 12 inches = 1 foot, 3 feet = 1 yard, 60 minutes = 1 hour, and 24 hours = 1 day.</p>

Vertical Connections	Cross Curricular Connections
<p>Grade 3 Standard 3-2 (Numbers 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. 3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value.</p> <p>Mathematics 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.</p> <p>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.</p>	<p>Language Arts Standard 2-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 2-1.1 Analyze a given literary text to make, revise, and confirm predictions. 2-1.6 Analyze the details that support the expression of the main idea in a given literary text. 2-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts. 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p>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.</p>

Notes:

Big Idea: Representation of numbers can be used to describe and learn about the world around us.

Subconcept: Meaning for multiplication and division can be developed by constructing a variety of models and strategies.

Lessons 11, 12, 13, 14, 15, 16, 17

Focus Question: What representations can be used for repeated addition or subtraction?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 2-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <p>2-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>2-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>2-1.3 Explain and justify answers to simple problems.</p> <p>2-1.4 Analyze patterns by reasoning systematically.</p> <p>2-1.5 Generalize mathematical concepts.</p> <p>2-1.6 Use a variety of forms of mathematical communication.</p> <p>2-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>2-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>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.</p> <p>Indicators</p> <p>2-2.5 Interpret models of equal grouping (multiplication) as repeated addition and arrays.</p> <p>2-2.6 Interpret models of sharing equally (division) in as repeated subtraction and arrays.</p>	<p>Mathematics Standard 2-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> <p>Indicators</p> <p>2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.</p> <p>2-3.2 Translate patterns into rules for simple multiples.</p> <p>2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>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.</p> <p>Indicators</p> <p>3-2.7 Recall basic multiplication facts through 12×12 and the corresponding division facts.</p> <p>3-2.8 Compare the inverse relationship between multiplication and division.</p> <p>3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome.</p> <p>3-2.10 Generate strategies to multiply whole numbers by using one single-digit factor and one multidigit factor.</p> <p>3-2.11 Use basic number combinations to compute related multiplication problems that involve multiples of 10.</p> <p>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.</p> <p>Indicators</p> <p>4-2.2 Apply divisibility rules for 2, 5, and 10.</p> <p>4-2.3 Apply an algorithm to multiply whole numbers fluently.</p> <p>4-2.4 Explain the effect on the product when one of the factors is changed.</p> <p>4-2.5 Generate strategies to divide whole numbers by single-digit divisors.</p> <p>Grade 5 Standard 5-2 (Numbers 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.</p> <p>Indicators</p> <p>5-2.2 Apply an algorithm to divide whole numbers fluently.</p> <p>5-2.3 Understand the relationship among the divisor, dividend, and quotient.</p> <p>5-2.9 Apply divisibility rules for 3, 6, and 9.</p>	<p>Language Arts Standard 2-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats.</p> <p>Indicators</p> <p>2-1.1 Analyze a given literary text to make, revise, and confirm predictions.</p> <p>2-1.6 Analyze the details that support the expression of the main idea in a given literary text.</p> <p>2-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.</p> <p>2-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p>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.</p> <p>Indicators</p> <p>2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.</p> <p>2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.</p> <p>2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.</p> <p>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.)</p> <p>2-4.7 Use appropriate spacing between words when writing on a page.</p> <p>2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> <p>Standard 2-6 (Researching): The student will access and use information from a variety of sources.</p> <p>Indicators</p> <p>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.</p> <p>2-6.6 Understand and follow multistep directions.</p>



Big Idea: Representation of numbers can be used to describe and learn about the world around us.

Subconcept: Basic concepts of probability can be applied to everyday experiences.

Lessons 18, 19, 20

Focus Question: What are examples of likely and unlikely events in everyday life?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 2-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <p>2-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>2-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>2-1.3 Explain and justify answers to simple problems.</p> <p>2-1.4 Analyze patterns by reasoning systematically.</p> <p>2-1.5 Generalize mathematical concepts.</p> <p>2-1.6 Use a variety of forms of mathematical communication.</p> <p>2-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>2-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics 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.</p> <p>Indicators</p> <p>2-6.2 Organize data in charts, pictographs, and tables.</p> <p>2-6.3 Organize data in charts, pictographs, and tables.</p> <p>2-6.4 Predict on the basis of data whether events are <i>more likely</i> or <i>less likely</i> to occur.</p>	<p>Mathematics Standard 2-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> <p>Indicators</p> <p>2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.</p> <p>2-3.2 Translate patterns into rules for simple multiples.</p> <p>2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 3 Standard 3-6 (Data Analysis and Probability) The student will demonstrate through the mathematical processes an understanding of organizing, interpreting, analyzing and making predictions about data, the benefits of multiple representations of a data set, and the basic concepts of probability. Indicators 3-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, or <i>impossible</i> to occur. 3-6.7 Understand when the probability of an event is 0 or 1.</p> <p>Grade 4 Standard 4-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the impact of data-collection methods, the appropriate graph for categorical or numerical data, and the analysis of possible outcomes for a simple event. Indicators 4-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, <i>impossible</i>, or <i>equally likely</i> to occur. 4-6.7 Analyze possible outcomes for a simple event.</p> <p>Grade 5 Standard 5-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability. Indicators 5-6.5 Represent the probability of a single-stage event in words and fractions. 5-6.6 Conclude why the sum of the probabilities of the outcomes of an experiment must equal 1.</p>	<p>Language Arts 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.</p> <p>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 directions.</p> <p>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.</p>

Notes: