

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

**Grade Three
Developing Number Concepts: Ordering and Arranging
Module A**

Students compare, read, and write whole numbers in a variety of representations. Addition and subtraction algorithms are compared and contrasted. Students compare, represent, and recall multiplication and division facts. Collections of objects, place-value manipulatives, fact cards, and a Student Record Book support 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: Representations of numbers can be used to describe and learn about the world around us.

Subconcept: Fact families can be analyzed for patterns using a variety of representations.

Lessons 1, 2, 3, 4, 5, 6, 7, 8

Focus Question: What strategies can be used to determine missing numbers?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 3-1 (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>3-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.</p> <p>3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>3-1.7 Use flexibility in mathematical representations.</p> <p>3-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p>Mathematics Standard 3-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.</p> <p>Indicators</p> <p>3-3.1 Create numeric patterns that involve whole-number operations.</p> <p>3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p>3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p>	<p>Mathematics 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 x 12 and the corresponding division facts.</p> <p>3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 4 Standard 4-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric and nonnumeric patterns, the representation of simple mathematical relationships, and the application of procedures to find the value of an unknown.</p> <p>Indicators</p> <p>4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.</p> <p>4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.</p> <p>4-3.3 Use a rule to complete a sequence or a table.</p> <p>4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations.</p> <p>4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p> <p>Grade 5 Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.</p> <p>Indicators</p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.4 Identify applications of commutative, associative, and distributive properties with whole numbers.</p> <p>Grade 6 Standard 6-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.</p> <p>Indicators</p> <p>6-3.2 Apply order of operations to simplify whole-number expressions.</p> <p>6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.</p> <p>6-3.4 Use the commutative, associative, and distributive properties to show that two expressions are equivalent.</p> <p>6-3.5 Use inverse operations to solve one-step equations that have whole-number solutions and variables with whole-number coefficients.</p>	<p>Language Arts Standard 3-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats.</p> <p>Indicators</p> <p>3-1.1 Analyze a given literary text to make, revise, and confirm predictions and draw conclusions.</p> <p>3-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.</p> <p>3-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p>Standard 3-4 (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>3-4.1 Use prewriting techniques such as creating lists, having discussions, using graphic organizers, and using literary models to organize written works.</p> <p>3-4.2 Use complete sentences (including compound sentences) in writing.</p> <p>3-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written works.</p>



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

Subconcept: The base-10 number system and its place-value structure can be analyzed for patterns using a variety of representations.

Lessons 9, 10, 11, 12, 13, 14

Focus Question: What strategies can be used to compare two whole numbers?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 3-1 (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>3-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.</p> <p>3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>3-1.7 Use flexibility in mathematical representations.</p> <p>3-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p>Mathematics 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</p> <p>3-2.1 Compare whole-number quantities through 999,999 by using the terms <i>is less than</i>, <i>is greater than</i>, and <i>is equal to</i> and the symbols $<$, $>$, and $=$.</p> <p>3-2.2 Represent in word form whole numbers through <i>nine hundred ninety-nine thousand</i>.</p> <p>3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value.</p>	<p>Mathematics Standard 3-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.</p> <p>Indicators</p> <p>3-3.1 Create numeric patterns that involve whole-number operations.</p> <p>3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p>3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<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 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 (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 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>Grade 6 Standard 6-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the concept of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.</p> <p>Indicators 6-2.2 Understand integers. 6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols \leq, \geq, $<$, $>$, and $=$. 6-2.7 Apply strategies and procedures to determine values of powers of 10, up to 10^6. 6-2.8 Represent the prime factorization of numbers by using exponents. 6-2.9 Represent whole numbers in exponential form.</p>	<p>Language Arts Standard 3-2 (Reading): The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p>Indicators 3-2.2 Analyze informational texts to draw conclusions and make inferences. 3-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations. 3-2.5 Carry out independent reading for extended periods of time to gain information. 3-2.7 Use graphic features such as illustrations, graphs, charts, maps, diagrams, and graphic organizers as sources of information.</p> <p>Standard 3-4 (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 3-4.1 Use prewriting techniques such as creating lists, having discussions, using graphic organizers, and using literary models to organize written works. 3-4.2 Use complete sentences (including compound sentences) in writing. 3-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written works.</p>



Big Idea: Representations 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 15, 16, 17, 18, 19, 20, 21, 22, 23, 24

Focus Question: What strategies can be applied to solve addition and subtraction problems?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 3-1 (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>3-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.</p> <p>3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>3-1.7 Use flexibility in mathematical representations.</p> <p>3-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p>Mathematics 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>3-2.3 Apply an algorithm to add and subtract whole numbers fluently.</p> <p>3-2.4 Apply procedures to round any whole number to the nearest 10, 100, or 1,000.</p> <p>3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value.</p>	<p>Mathematics Standard 3-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.</p> <p>Indicators</p> <p>3-3.1 Create numeric patterns that involve whole-number operations.</p> <p>3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p>3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<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 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.</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. 5-2.5 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>Grade 6 Standard 6-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the concept of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.</p> <p>Indicators 6-2.2 Understand integers. 6-2.4 Apply an algorithm to add and subtract fractions. 6-2.5 Generate strategies to multiply and divide fractions and decimals.</p>	<p>Language Arts Standard 3-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats.</p> <p>Indicators 3-1.1 Analyze a given literary text to make, revise, and confirm predictions and draw conclusions. 3-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts. 3-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p>Standard 3-4 (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 3-4.1 Use prewriting techniques such as creating lists, having discussions, using graphic organizers, and using literary models to organize written works. 3-4.2 Use complete sentences (including compound sentences) in writing. 3-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written works.</p>

Notes:

Big Idea: Representations 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 25, 26, 27, 28, 29, 30

Focus Question: What strategies can be applied to solve addition and subtraction problems?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 3-1 (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>3-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.</p> <p>3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>3-1.7 Use flexibility in mathematical representations.</p> <p>3-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p>Mathematics 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 x 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>Mathematics Standard 3-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.</p> <p>Indicators</p> <p>3-3.1 Create numeric patterns that involve whole-number operations.</p> <p>3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p>3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<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>4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions.</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>4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value.</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>Grade 6 Standard 6-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the concept of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.</p> <p>Indicators</p> <p>6-2.2 Understand integers.</p> <p>6-2.5 Generate strategies to multiply and divide fractions and decimals.</p> <p>6-2.6 Understand the relationship between ratio/rate and multiplication/division.</p> <p>6-2.8 Represent the prime factorization of numbers by using exponents.</p>	<p>Language Arts Standard 3-4 (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>3-4.1 Use prewriting techniques such as creating lists, having discussions, using graphic organizers, and using literary models to organize written works.</p> <p>3-4.2 Use complete sentences (including compound sentences) in writing.</p> <p>3-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written works.</p>

