

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

**Grade Five  
Developing Number Concepts: Values and Variables  
Module B**

Mixed numbers and improper fractions are explored. A variety of fractions, decimals, and percents are compared and represented. Strategies are generated to find the greatest common factor (GCF) and the least common multiple (LCM) of two whole numbers. Strategies are generated to add and subtract fractions. Probability and discrete mathematics are explored. 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.

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## 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: Factors and multiples can be determined using a variety of strategies.**

**Lessons 1, 2, 3, 4**

**Focus Question: What strategies can be used to determine factors and multiples?**

<b>Process Standards</b>	<b>Content Standards</b>	<b>Horizontal Connections</b>
<p><b>Mathematics</b>  <b>Standard 5-1 (Process):</b>            The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.  <b>Indicators</b>            5-1.1 Analyze information to solve increasingly more sophisticated problems.            5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.            5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.            5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.            5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.            5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.            5-1.7 Use flexibility in mathematical representations.            5-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p><b>Mathematics</b>  <b>Standard 5-2 (Number and Operations):</b>            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.  <b>Indicators</b>            5-2.6 Classify numbers as prime, composite, or neither.            5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.            5-2.9 Apply divisibility rules for 3, 6, and 9.</p>	<p><b>Mathematics</b>  <b>Standard 5-3 (Algebra):</b>            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.  <b>Indicators</b>            5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.            5-3.2 Analyze patterns and functions with words, tables, and graphs.            5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p>

**Notes:**

Vertical Connections	Cross Curricular Connections
<p><b>Grade 6</b>  <b>Standard 6-2 (Numbers and Operations):</b>  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><b>Indicators</b>  6-2.2 Understand integers.  6-2.8 Represent the prime factorization of numbers by using exponents.  6-2.9 Represent whole numbers in exponential form.</p> <p><b>Grade 7</b>  <b>Standard 7-2 (Numbers and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of the representation of rational numbers, percentages, and square roots of perfect squares; the application of ratios, rates, and proportions to solve problems; accurate, efficient, and generalizable methods for operations with integers; the multiplication and division of fractions and decimals; and the inverse relationship between squaring and finding the square roots of perfect squares.</p> <p><b>Indicators</b>  7-2.6 Translate between standard form and exponential form.  7-2.7 Translate between standard form and scientific notation.</p> <p><b>Grade 8</b>  <b>Standard 8-2 (Numbers and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of operations with integers, the effects of multiplying and dividing with rational numbers, the comparative magnitude of rational and irrational numbers, the approximation of cube and square roots, and the application of proportional reasoning.</p> <p><b>Indicators</b>  8-2.6 Apply strategies and procedures to approximate between two whole numbers the square roots or cube roots of numbers less than 1,000.</p>	<p><b>Language Arts</b>  <b>Standard 5-2 (Reading):</b>  The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p><b>Indicators</b>  5-2.1 Summarize the central idea and supporting evidence of a given informational text.  5-2.2 Analyze informational texts to draw conclusions and make inferences.  5-2.4 Create responses to informational texts through a variety of methods such as drawings, written works, and oral presentations.  5-2.5 Carry out independent reading for extended periods of time to gain information.  5-2.6 Understand that titles, print styles, chapter headings, captions, subheadings, and white space provide information to the reader.  5-2.7 Use graphic features such as illustrations, graphs, charts, maps, diagrams, and graphic organizers as sources of information.  5-2.8 Use functional text features (including tables of contents, glossaries, indexes, and appendices).</p> <p><b>Standard 5-4 (Writing):</b>  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><b>Indicators</b>  5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p><b>Standard 5-5 (Writing):</b>  The student will write for a variety of purposes and audiences.</p> <p><b>Indicators</b>  5-5.3 Create written descriptions using precise language and vivid details.</p>

**Notes:**



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

**Subconcept: Meaning for fractional relationships can be developed by constructing a variety of models.**

**Lessons 5, 6, 7, 8, 9, 10, 11, 12**

**Focus Question: What strategies can be used to add and subtract fractional numbers?**

Process Standards	Content Standards	Horizontal Connections
<p><b>Mathematics</b>  <b>Standard 5-1 (Process):</b>            The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p><b>Indicators</b></p> <p>5-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.</p> <p>5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>5-1.7 Use flexibility in mathematical representations.</p> <p>5-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p><b>Mathematics</b>  <b>Standard 5-2 (Numbers and Operations):</b>            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><b>Indicators</b></p> <p>5-2.4 Compare whole numbers, decimals, and fractions by using the symbols <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p> <p>5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.</p> <p>5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.</p> <p>5-2.9 Apply divisibility rules for 3, 6, and 9.</p>	<p><b>Mathematics</b>  <b>Standard 5-3 (Algebra):</b>            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><b>Indicators</b></p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.2 Analyze patterns and functions with words, tables, and graphs.</p> <p>5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p>

Vertical Connections	Cross Curricular Connections
<p><b>Grade 6</b>  <b>Standard 6-2 (Numbers and Operations):</b>  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><b>Indicators</b></p> <p>6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p> <p>6-2.4 Apply an algorithm to add and subtract fractions.</p> <p>6-2.5 Generate strategies to multiply and divide fractions and decimals.</p> <p>6-2.8 Represent the prime factorization of numbers by using exponents.</p> <p>6-2.9 Represent whole numbers in exponential form.</p> <p><b>Grade 7</b>  <b>Standard 7-2 (Numbers and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of the representation of rational numbers, percentages, and square roots of perfect squares; the application of ratios, rates, and proportions to solve problems; accurate, efficient, and generalizable methods for operations with integers; the multiplication and division of fractions and decimals; and the inverse relationship between squaring and finding the square roots of perfect squares.</p> <p><b>Indicators</b></p> <p>7-2.9 Apply an algorithm to multiply and divide fractions and decimals.</p> <p>7-2.6 Translate between standard form and exponential form.</p> <p>7-2.7 Translate between standard form and scientific notation.</p> <p><b>Grade 8</b>  <b>Standard 8-2 (Numbers and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of operations with integers, the effects of multiplying and dividing with rational numbers, the comparative magnitude of rational and irrational numbers, the approximation of cube and square roots, and the application of proportional reasoning.</p> <p><b>Indicators</b></p> <p>8-2.3 Represent the approximate location of irrational numbers on a number line.</p> <p>8-2.4 Compare rational and irrational numbers by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p>	<p><b>Language Arts</b>  <b>Standard 5-1 (Reading):</b>  The student will read and comprehend a variety of literary texts in print and nonprint formats.</p> <p><b>Indicators</b></p> <p>5-1.1 Analyze literary texts to draw conclusions and make inferences.</p> <p>5-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 5-2 (Reading):</b>  The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p><b>Indicators</b></p> <p>5-2.5 Carry out independent reading for extended periods of time to gain information.</p> <p>5-2.7 Use graphic features such as illustrations, graphs, charts, maps, diagrams, and graphic organizers as sources of information.</p> <p><b>Standard 5-4 (Writing):</b>  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><b>Indicators</b></p> <p>5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p><b>Standard 5-5 (Writing):</b>  The student will write for a variety of purposes and audiences.</p> <p><b>Indicators</b></p> <p>5-5.3 Create written descriptions using precise language and vivid details.</p>



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

**Subconcept: Meaning for percents can be developed by connecting fractions and decimals.**

**Lessons 13, 14, 15, 16**

**Focus Question: What strategies can be used to compare fractions, decimals, and percents?**

Process Standards	Content Standards	Horizontal Connections
<p><b>Mathematics Standard 5-1 Process):</b> The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p><b>Indicators</b></p> <p>5-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.</p> <p>5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>5-1.7 Use flexibility in mathematical representations.</p> <p>5-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p><b>Mathematics Standard 5-2 (Numbers and Operations):</b> 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><b>Indicators</b></p> <p>5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths.</p> <p>5-2.4 Compare whole numbers, decimals, and fractions by using the symbols <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p>	<p><b>Mathematics Standard 5-5 (Measurement):</b> The student will demonstrate through the mathematical processes an understanding of the units and systems of measurement and the application of tools and formulas to determine measurement.</p> <p><b>Indicators</b></p> <p><b>Standard 5-6 (Data Analysis and Probability):</b> 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.</p> <p><b>Indicators</b></p> <p>5-6.1 Design a mathematical investigation to address a question.</p> <p>5-6.2 Analyze how data-collection methods affect the nature of the data set.</p>

**Notes:**

Vertical Connections	Cross Curricular Connections
<p><b>Grade 6</b>  <b>Standard 6-2 (Numbers and Operations):</b>  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><b>Indicators</b></p> <p>6-2.1 Understand whole-number percentages through 100.  6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p> <p><b>Grade 7</b>  <b>Standard 7-2 (Numbers and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of the representation of rational numbers, percentages, and square roots of perfect squares; the application of ratios, rates, and proportions to solve problems; accurate, efficient, and generalizable methods for operations with integers; the multiplication and division of fractions and decimals; and the inverse relationship between squaring and finding the square roots of perfect squares.</p> <p><b>Indicators</b></p> <p>7-2.1 Understand fractional percentages and percentages greater than one hundred.  7-2.2 Represent the location of rational numbers and square roots of perfect squares on a number line.  7-2.3 Compare rational numbers, percentages, and square roots of perfect squares by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p> <p><b>Grade 8</b>  <b>Standard 8-2 (Number and Operations):</b>  The student will demonstrate through the mathematical processes an understanding of operations with integers, the effects of multiplying and dividing with rational numbers, the comparative magnitude of rational and irrational numbers, the approximation of cube and square roots, and the application of proportional reasoning.</p> <p><b>Indicators</b></p> <p>8-2.3 Represent the approximate location of irrational numbers on a number line.  8-2.4 Compare rational and irrational numbers by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p>	<p><b>Language Arts</b>  <b>Standard 5-4 (Writing):</b>  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><b>Indicators</b></p> <p>5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p><b>Standard 5-5 (Writing):</b>  The student will write for a variety of purposes and audiences.</p> <p><b>Indicators</b></p> <p>5-5.3 Create written descriptions using precise language and vivid details.</p>



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

**Subconcept: Attributes of negative numbers can be analyzed, described, and modeled.**

**Lessons 17, 18, 19**

**Focus Question: What patterns can be observed with negative numbers?**

<b>Process Standards</b>	<b>Content Standards</b>	<b>Horizontal Connections</b>
<p><b>Mathematics</b>  <b>Standard 5-1 (Process):</b>            The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p><b>Indicators</b></p> <p>5-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.</p> <p>5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>5-1.7 Use flexibility in mathematical representations.</p> <p>5-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p><b>Mathematics</b>  <b>Standard 5-3 (Algebra):</b>            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><b>Indicators</b></p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.2 Analyze patterns and functions with words, tables, and graphs.</p> <p>5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p> <p>5-3.5 Analyze situations that show change over time.</p>	<p><b>Mathematics</b>  <b>Standard 5-5 (Measurement):</b>            The student will demonstrate through the mathematical processes an understanding of the units and systems of measurement and the application of tools and formulas to determine measurement.</p> <p><b>Indicators</b></p> <p>5-5.7 Understand the relationship between the Celsius and Fahrenheit temperature scales.</p>

**Notes:**

Vertical Connections	Cross Curricular Connections
<p><b>Grade 6</b>  <b>Standard 6-3 (Algebra):</b>  The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.  <b>Indicators</b>  6-3.1 Analyze numeric and algebraic patterns and pattern relationships.  6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.</p> <p><b>Grade 7</b>  <b>Standard 7-3 (Algebra):</b>  The student will demonstrate through the mathematical processes an understanding of proportional relationships.  <b>Indicators</b>  7-3.1 Analyze geometric patterns and pattern relationships.  7-3.2 Analyze tables and graphs to describe the rate of change between and among quantities.  7-3.3 Understand slope as a constant rate of change.</p> <p><b>Grade 8</b>  <b>Standard 8-3 (Algebra):</b>  The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions.  <b>Indicators</b>  8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.  8-3.5 Classify relationships between two variables in graphs, tables, and/or equations as either linear or nonlinear.  8-3.6 Identify the coordinates of the <math>x</math>- and <math>y</math>-intercepts of a linear equation from a graph, equation, and/or table.  8-3.7 Identify the slope of a linear equation from a graph, equation, and/or table.</p>	<p><b>Language Arts</b>  <b>Standard 5-1 (Reading)</b>  The student will read and comprehend a variety of literary texts in print and nonprint formats.  <b>Indicators</b>  5-1.1 Analyze literary texts to draw conclusions and make inferences.  5-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.  5-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 5-4 (Writing)</b>  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.  <b>Indicators</b>  5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p><b>Standard 5-5 (Writing)</b>  The student will write for a variety of purposes and audiences.  <b>Indicators</b>  5-5.3 Create written descriptions using precise language and vivid details.</p>

**Notes:**

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

**Subconcept: Basic concepts of probability and discrete mathematics can be applied to everyday experiences.**

**Lessons 20, 21, 22, 23, 24**

**Focus Question: In what way does a number line aid in describing probability?**

Process Standards	Content Standards	Horizontal Connections
<p><b>Mathematics</b>  <b>Standard 5-1 (Process):</b>            The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p><b>Indicators</b></p> <p>5-1.1 Analyze information to solve increasingly more sophisticated problems.</p> <p>5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.</p> <p>5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.</p> <p>5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.</p> <p>5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.</p> <p>5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.</p> <p>5-1.7 Use flexibility in mathematical representations.</p> <p>5-1.8 Recognize the limitations of various forms of mathematical representations.</p>	<p><b>Mathematics</b>  <b>Standard 5-6 (Data Analysis and Probability):</b>            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.</p> <p><b>Indicators</b></p> <p>5-6.1 Design a mathematical investigation to address a question.</p> <p>5-6.2 Analyze how data-collection methods affect the nature of the data set.</p> <p>5-6.5 Represent the probability of a single-stage event in words and fractions.</p> <p>5-6.6 Conclude why the sum of the probabilities of the outcomes of an experiment must equal 1.</p>	<p><b>Mathematics</b>  <b>Standard 5-3 (Algebra):</b>            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><b>Indicators</b></p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.2 Analyze patterns and functions with words, tables, and graphs.</p> <p>5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p>

**Notes:**

Vertical Connections	Cross Curricular Connections
<p><b>Grade 6</b>  <b>Standard 6-6 (Data Analysis and Probability):</b>  The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample.  <b>Indicators</b>  6-6.4 Use theoretical probability to determine the sample space and probability for one- and two-stage events such as tree diagrams, models, lists, charts, and pictures.  6-6.5 Apply procedures to calculate the probability of complementary events.</p> <p><b>Grade 7</b>  <b>Standard 7-6 (Data Analysis and Probability):</b>  The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples.  <b>Indicators</b>  7-6.5 Apply procedures to calculate the probability of mutually exclusive simple or compound events.  7-6.6 Interpret the probability of mutually exclusive simple or compound events.  7-6.7 Differentiate between experimental and theoretical probability of the same event.  7-6.8 Use the fundamental counting principle to determine the number of possible outcomes for a multistage event.</p> <p><b>Grade 8</b>  <b>Standard 8-6 (Data Analysis and Probability):</b>  The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample.  <b>Indicators</b>  8-6.3 Use theoretical and experimental probability to make inferences and convincing arguments about an event or events.  8-6.4 Apply procedures to calculate the probability of two dependent events.  8-6.5 Interpret the probability for two dependent events.  8-6.6 Apply procedures to compute the odds of a given event.  8-6.7 Analyze probability using area models.</p>	<p><b>Language Arts</b>  <b>Standard 5-1 (Reading)</b>  The student will read and comprehend a variety of literary texts in print and nonprint formats.  <b>Indicators</b>  5-1.1 Analyze literary texts to draw conclusions and make inferences.  5-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.  5-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 5-4 (Writing)</b>  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.  <b>Indicators</b>  5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p><b>Standard 5-5 (Writing)</b>  The student will write for a variety of purposes and audiences.  <b>Indicators</b>  5-5.3 Create written descriptions using precise language and vivid details.</p>

**Notes:**