

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

**First Grade
Developing Algebraic Thinking: Together and Apart**

In this module, students explore movement and sound patterns with materials such as rhythm sticks. They design their own patterns and investigate adding another element to a repeating pattern. Students sort and classify sets of objects and count the objects. They gather data and display the information in simple tables and graphs. A class journal is kept throughout the pattern and data 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: Patterns are in the world around us.

Subconcept: Patterns can be described.

Lessons 1, 2, 3

Focus Question: What attributes can be used to describe patterns?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (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>1-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>1-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>1-1.3 Explain and justify answers to simple problems.</p> <p>1-1.4 Analyze patterns by reasoning systematically.</p> <p>1-1.5 Generalize mathematical concepts.</p> <p>1-1.6 Use a variety of forms of mathematical communication.</p> <p>1-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>1-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics Standard 1-3 (Algebra): The student will demonstrate through the mathematical processes a sense of numeric patterns, the relationship between addition and subtraction, and change over time.</p> <p>Indicators</p> <p>1-3.2 Translate patterns into rules for simple addition and subtraction.</p> <p>1-3.4 Analyze numeric relationships to complete and extend simple patterns.</p>	<p>Mathematics Standard 1-4 (Geometry): The student will demonstrate through the mathematical processes a sense of two- and three-dimensional geometric shapes, symmetry, and relative positions and directions in space.</p> <p>Indicators</p> <p>1-4.2 Analyze the two-dimensional shapes circle, square, triangle, and rectangle.</p>

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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. 2-3.2 Translate patterns into rules for simple multiples. 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p> <p>Grade 3 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. Indicators 3-3.1 Create numeric patterns that involve whole-number operations. 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations. 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p> <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. Indicators 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths. 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations. 4-3.3 Use a rule to complete a sequence or a table. 4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations. 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p>	<p>Language Arts Standard 1-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 1-1.1 Use pictures and words to make and revise predictions about a given literary text. 1-1.3 Exemplify sound devices in texts read aloud. 1-1.5 Understand how elements of the author’s craft such as word choice affect the meaning of a given literary text.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators 1-3.8 Use knowledge of letter names and their corresponding sounds to spell words independently. 1-3.18 Understand the parts of a book. 1-3.19 Carry out left-to-right, top-to-bottom, and return-sweep directionality on the printed page. 1-3.20 Distinguish among letters, words, and sentences.</p> <p>Standard 1-4 (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 1-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. 1-4.2 Use simple sentences in writing. 1-4.3 Use pictures, letters, or words to tell a story from beginning to end. 1-4.4 Use the conventions of written Standard American English. 1-4.7 Use appropriate spacing between words. 1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.</p> <p>Standard 1-5 (Writing): The student will write for a variety of purposes and audiences. Indicators 1-5.2 Create narratives such as stories and journal entries about people, places, actions, or things.</p> <p>Standard 1-6 (Researching): The student will access and use information from a variety of sources. Indicators 1-6.5 Use complete sentences when orally presenting</p>



	<p>information.</p> <p>Social Studies Standard 1-3 (Government): The student will demonstrate an understanding of how government functions and how government affects families. Indicators 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p> <p>Standard 1-6 (Economics): The student will demonstrate and understanding of how and why people make economic choices and the importance of these choices for families. Indicators 1-6.3 Identify ways that families and communities cooperate and compromise in order to meet their needs and wants.</p>
--	--

Notes:

Big Idea: Patterns are in the world around us.

Subconcept: Patterns can be analyzed and extended.

Lessons 4, 5, 6

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

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators 1-1.1 Apply substantive mathematical problem-solving strategies. 1-1.2 Generate conjectures and exchange mathematical ideas. 1-1.3 Explain and justify answers to simple problems. 1-1.4 Analyze patterns by reasoning systematically. 1-1.5 Generalize mathematical concepts. 1-1.6 Use a variety of forms of mathematical communication. 1-1.7 Generalize connections among mathematics, the environment, and other subjects. 1-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics Standard 1-3 (Algebra): The student will demonstrate through the mathematical processes a sense of numeric patterns, the relationship between addition and subtraction, and change over time. Indicators 1-3.2 Translate patterns into rules for simple addition and subtraction. 1-3.4 Analyze numeric relationships to complete and extend simple patterns.</p>	<p>Mathematics Standard 1-4 (Geometry): The student will demonstrate through the mathematical processes a sense of two- and three-dimensional geometric shapes, symmetry, and relative positions and directions in space. Indicators 1-4.2 Analyze the two-dimensional shapes circle, square, triangle, and rectangle.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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. 2-3.2 Translate patterns into rules for simple multiples. 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p> <p>Grade 3 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. Indicators 3-3.1 Create numeric patterns that involve whole-number operations. 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations. 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p> <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. Indicators 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths. 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations. 4-3.3 Use a rule to complete a sequence or a table. 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p>	<p>Language Arts Standard 1-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 1-1.1 Use pictures and words to make and revise predictions about a given literary text. 1-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators 1-3.3 Use vocabulary acquired from a variety of sources.</p> <p>Standard 1-4 (Reading): 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 1-4.2 Use simple sentences in writing. 1-4.5 Use proofreading skills to edit for the correct use of written Standard American English. 1-4.6 Use revision strategies to improve word choice in written work. 1-4.7 Use appropriate spacing between words. 1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.</p> <p>Standard 1-5 (Writing): The student will write for a variety of purposes and audiences. Indicators 1-5.3 Create written pieces that describe personal experiences, people, places, or things and that use words that appeal to the senses.</p> <p>Standard 1-6 (Researching): The student will access and use information from a variety of sources. Indicators 1-6.1 Generate how and why questions about a topic of interest. 1-6.3 Create categories such as plants and animals to classify information. 1-6.5 Use complete sentences when orally presenting information. 1-6.6 Generate one- and two-step oral directions.</p>



	<p>Social Studies Standard 1-3 (Government): The student will demonstrate an understanding of how government functions and how government affects families.</p> <p>Indicators 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p>
--	--

Notes:

Big Idea: Patterns are in the world around us.

Subconcept: Number patterns can be analyzed and described.

Lessons 7, 8, 9, 10

Focus Question: In what ways can number patterns be represented?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <ul style="list-style-type: none"> 1-1.1 Apply substantive mathematical problem-solving strategies. 1-1.2 Generate conjectures and exchange mathematical ideas. 1-1.3 Explain and justify answers to simple problems. 1-1.4 Analyze patterns by reasoning systematically. 1-1.5 Generalize mathematical concepts. 1-1.6 Use a variety of forms of mathematical communication. 1-1.7 Generalize connections among mathematics, the environment, and other subjects. 1-1.8 Use multiple informal representations to convey mathematical ideas. 	<p>Mathematics Standard 1-3 (Algebra): The student will demonstrate through the mathematical processes a sense of numeric patterns, the relationship between addition and subtraction, and change over time.</p> <p>Indicators</p> <ul style="list-style-type: none"> 1-3.1 Analyze numeric patterns in addition and subtraction to develop strategies for acquiring basic facts. 1-3.2 Translate patterns into rules for simple addition and subtraction. 1-3.4 Analyze numeric relationships to complete and extend simple patterns. 1-3.5 Classify a number as odd or even. 	<p>Mathematics Standard 1-2 (Number and Operations): The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationship among addition, subtraction, and related basic facts; and the connections among numeric, oral and written-word forms of whole numbers.</p> <p>Indicators</p> <ul style="list-style-type: none"> 1-2.1 Translate between numeral and quantity through 100. 1-2.6 Recall basic addition facts through $9 + 9$ and corresponding subtraction facts. 1-2.7 Summarize the inverse relationship between addition and subtraction. 1-2.8 Generate strategies to add and subtract without regrouping through two-digit numbers. <p>Standard 1-5 (Measurement): The student will demonstrate through the mathematical processes a sense of the value of combinations of coins and the measurement of length, weight, time, and temperature.</p> <p>Indicators</p> <ul style="list-style-type: none"> 1-5.1 Use a counting procedure to determine the value of a collection of pennies, nickels, dimes, and quarters totaling less than a dollar. <p>Standard 1-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes a sense of collecting, organizing and interpreting data and of making predictions on the basis of data.</p> <p>Indicators</p> <ul style="list-style-type: none"> 1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables.

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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. 2-3.2 Translate patterns into rules for simple multiples. 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p> <p>Grade 3 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. Indicators 3-3.1 Create numeric patterns that involve whole-number operations. 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations. 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p> <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. Indicators 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths. 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations. 4-3.3 Use a rule to complete a sequence or a table. 4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations. 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p>	<p>Language Arts Standard 1-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 1-1.1 Use pictures and words to make and revise predictions about a given literary text. 1-1.6 Use relevant details in summarizing stories read aloud.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies.</p> <p>Standard 1-4 (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 1-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. 1-4.2 Use simple sentences in writing. 1-4.6 Use revision strategies to improve word choice in written work. 1-4.7 Use appropriate spacing between words. 1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.</p> <p>Standard 1-5 (Writing): The student will write for a variety of purposes and audiences. Indicators 1-5.3 Create written pieces that describe personal experiences, people, places, or things and that use words that appeal to the senses.</p> <p>Social Studies Standard 1-3 (Government): The student will demonstrate an understanding of how government functions and how government affects families. Indicators 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p>



Big Idea: Data can be collected about the world around us.

Subconcept: Collections can be sorted according to a rule.

Lessons 11, 12, 13

Focus Question: What attributes can be used to sort collections?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators 1-1.1 Apply substantive mathematical problem-solving strategies. 1-1.2 Generate conjectures and exchange mathematical ideas. 1-1.3 Explain and justify answers to simple problems. 1-1.4 Analyze patterns by reasoning systematically. 1-1.5 Generalize mathematical concepts. 1-1.6 Use a variety of forms of mathematical communication. 1-1.7 Generalize connections among mathematics, the environment, and other subjects. 1-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics Standard 1-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes a sense of collecting, organizing and interpreting data and of making predictions on the basis of data. Indicators 1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables.</p>	<p>Mathematics Standard 1-2 (Numbers and Operations): The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationship among addition, subtraction, and related basic facts; and the connections among numeric, oral and written-word forms of whole numbers. Indicators 1-2.1 Translate between numeral and quantity through 100. 1-2.5 Compare whole-number quantities through 100 by using the terms <i>is greater than</i>, <i>is less than</i>, and <i>is equal to</i>.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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 2-6.1 Create survey questions to collect data. 2-6.2 Organize data in charts, pictographs, and tables. 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>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 3-6.1 Apply a procedure to find the range of a data set. 3-6.2 Organize data in tables, bar graphs, and dot plots. 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots. 3-6.4 Analyze dot plots and bar graphs to make predictions about populations. 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.</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 4-6.1 Compare how data-collection methods impact survey results. 4-6.2 Interpret data in tables, line graphs, bar graphs, and double bar graphs whose scale increments are greater than or equal to 1. 4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1. 4-6.4 Distinguish between categorical and numerical data. 4-6.5 Match categorical and numerical data to appropriate graphs.</p>	<p>Language Arts Standard 1-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 1-1.1 Use pictures and words to make and revise predictions about a given literary text. 1-1.6 Use relevant details in summarizing stories read aloud.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators 1-3.16 Use pictures and words to construct meaning.</p> <p>Standard 1-4 (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 1-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. 1-4.2 Use simple sentences in writing. 1-4.6 Use revision strategies to improve word choice in written work. 1-4.7 Use appropriate spacing between words. 1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.</p> <p>Standard 1-5 (Writing): The student will write for a variety of purposes and audiences. Indicators 1-5.2 Create narratives such as stories and journal entries about people, places, actions, or things. 1-5.3 Create written pieces that describe personal experiences, people, places, or things and that use words that appeal to the senses.</p> <p>Standard 1-6 (Researching): The student will access and use information from a variety of sources. Indicators 1-6.1 Generate how and why questions about a topic of interest. 1-6.2 Use print sources of information such as books, newspapers, pictures, charts, and graphs and nonprint media to access information. 1-6.3 Create categories such as plants and animals to classify information. 1-6.5 Use complete sentences when orally presenting</p>



	<p>information.</p> <p>Science Standard 1-1 (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.</p> <p>Indicators 1-1.1 Compare, classify, and sequence objects by number, shape, texture, size, color, and motion, using standard English units of measurement where appropriate.</p> <p>Social Studies Standard 1-1 (Communities): The student will demonstrate an understanding of how individuals, families, and communities live and work together here and across the world.</p> <p>Indicators 1-1.5 Illustrate different elements of community life, including the structure of schools; typical jobs; the interdependence of family, school, and the community; and the common methods of transportation and communication.</p> <p>Standard 1-3 (Government): The student will demonstrate an understanding of how government functions and how government affects families.</p> <p>Indicators 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p>
--	--



Big Idea: Data can be collected about the world around us.
Subconcept: Counts can be made of data that has been gathered.
Lessons 14, 15, 16

Focus Question: In what ways can counts of sets be displayed?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (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>1-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>1-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>1-1.3 Explain and justify answers to simple problems.</p> <p>1-1.4 Analyze patterns by reasoning systematically.</p> <p>1-1.5 Generalize mathematical concepts.</p> <p>1-1.6 Use a variety of forms of mathematical communication.</p> <p>1-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>1-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics Standard 1-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes a sense of collecting, organizing and interpreting data and of making predictions on the basis of data.</p> <p>Indicators</p> <p>1-6.1 Use survey questions to collect data.</p> <p>1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables.</p> <p>1-6.3 Interpret data in picture graphs, object graphs, bar graphs, and tables by using the comparative terms <i>more</i>, <i>less</i>, <i>greater</i>, <i>fewer</i>, <i>greater than</i>, and <i>less than</i>.</p>	<p>Mathematics Standard 1-2 (Numbers and Operations): The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationship among addition, subtraction, and related basic facts; and the connections among numeric, oral and written-word forms of whole numbers.</p> <p>Indicators</p> <p>1-2.1 Translate between numeral and quantity through 100.</p> <p>1-2.3 Represent quantities in word form through <i>ten</i>.</p> <p>1-2.4 Recognize whole-number words that correspond to numerals through <i>twenty</i>.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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 2-6.1 Create survey questions to collect data. 2-6.2 Organize data in charts, pictographs, and tables. 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>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 3-6.1 Apply a procedure to find the range of a data set. 3-6.2 Organize data in tables, bar graphs, and dot plots. 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots. 3-6.4 Analyze dot plots and bar graphs to make predictions about populations. 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.</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 4-6.1 Compare how data-collection methods impact survey results. 4-6.2 Interpret data in tables, line graphs, bar graphs, and double bar graphs whose scale increments are greater than or equal to 1. 4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1. 4-6.4 Distinguish between categorical and numerical data. 4-6.5 Match categorical and numerical data to appropriate graphs.</p>	<p>Language Arts Standard 1-1 (Reading): The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 1-1.1 Use pictures and words to make and revise predictions about a given literary text. 1-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts. 1-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators 1-3.1 Use pictures, context, and letter-sound relationships to read unfamiliar words. 1-3.3 Use vocabulary acquired from a variety of sources. 1-3.4 Recognize high-frequency words encountered in texts. 1-3.5 Use appropriate phrasing and intonation when reading familiar texts aloud. 1-3.6 Use appropriate voice level and intonation when speaking and reading aloud. 1-3.8 Use knowledge of letter names and their corresponding sounds to spell words independently. 1-3.16 Use pictures and words to construct meaning. 1-3.18 Understand the parts of a book. 1-3.19 Carry out left-to-right, top-to-bottom, and return-sweep directionality on the printed page. 1-3.20 Distinguish among letters, words, and sentences.</p> <p>Standard 1-4 (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 1-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. 1-4.2 Use simple sentences in writing. 1-4.3 Use pictures, letters, or words to tell a story from beginning to end.</p> <p>Standard 1-6 (Researching): The student will access and use information from a variety of sources. Indicators 1-6.1 Generate how and why questions about a topic of interest. 1-6.2 Use print sources of information such as books,</p>



	<p>newspapers, pictures, charts, and graphs and nonprint media to access information.</p> <p>1-6.3 Create categories such as plants and animals to classify information.</p> <p>1-6.5 Use complete sentences when orally presenting information.</p> <p>1-6.6 Generate one- and two-step oral directions.</p> <p>Science Standard 1-1 (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.</p> <p>Indicators 1-1.1 Compare, classify, and sequence objects by number, shape, texture, size, color, and motion, using standard English units of measurement where appropriate.</p> <p>Social Studies Standard 1-1 (Communities): The student will demonstrate an understanding of how individuals, families, and communities live and work together here and across the world.</p> <p>Indicators 1-1.5 Illustrate different elements of community life, including the structure of schools; typical jobs; the interdependence of family, school, and the community; and the common methods of transportation and communication.</p> <p>Standard 1-3 (Government): The student will demonstrate an understanding of how government functions and how government affects families.</p> <p>Indicators 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p>
--	--

Notes:

Big Idea: Data can be collected about the world around us.

Subconcept: Data can be displayed and analyzed.

Lessons 17, 18, 19, 20

Focus Question: In what ways can sets of data be compared?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 1-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators 1-1.1 Apply substantive mathematical problem-solving strategies. 1-1.2 Generate conjectures and exchange mathematical ideas. 1-1.3 Explain and justify answers to simple problems. 1-1.4 Analyze patterns by reasoning systematically. 1-1.5 Generalize mathematical concepts. 1-1.6 Use a variety of forms of mathematical communication. 1-1.7 Generalize connections among mathematics, the environment, and other subjects. 1-1.8 Use multiple informal representations to convey mathematical ideas.</p>	<p>Mathematics Standard 1-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes a sense of collecting, organizing and interpreting data and of making predictions on the basis of data. Indicators 1-6.1 Use survey questions to collect data. 1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables. 1-6.3 Interpret data in picture graphs, object graphs, bar graphs, and tables by using the comparative terms <i>more</i>, <i>less</i>, <i>greater</i>, <i>fewer</i>, <i>greater than</i>, and <i>less than</i>.</p>	<p>Mathematics Standard 1-2 (Number and Operations): The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationship among addition, subtraction, and related basic facts; and the connections among numeric, oral and written-word forms of whole numbers. Indicators 1-2.1 Translate between numeral and quantity through 100. 1-2.3 Represent quantities in word form through <i>ten</i>. 1-2.4 Recognize whole-number words that correspond to numerals through <i>twenty</i>. 1-2.5 Compare whole-number quantities through 100 by using the terms <i>is greater than</i>, <i>is less than</i>, and <i>is equal to</i>.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 2 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 2-6.1 Create survey questions to collect data. 2-6.2 Organize data in charts, pictographs, and tables. 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>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.</p> <p>Indicators 3-6.1 Apply a procedure to find the range of a data set. 3-6.2 Organize data in tables, bar graphs, and dot plots. 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots. 3-6.4 Analyze dot plots and bar graphs to make predictions about populations. 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.</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.</p> <p>Indicators 4-6.1 Compare how data-collection methods impact survey results. 4-6.2 Interpret data in tables, line graphs, bar graphs, and double bar graphs whose scale increments are greater than or equal to 1. 4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1. 4-6.4 Distinguish between categorical and numerical data. 4-6.5 Match categorical and numerical data to appropriate graphs.</p>	<p>Language Arts Standard 1-2 (Reading): The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p>Indicators 1-2.7 Understand graphic features such as illustrations, graphs, charts, and maps as sources of information. 1-2.8 Understand functional text features.</p> <p>Standard 1-3 (Reading): The student will learn to read by applying appropriate skills and strategies.</p> <p>Indicators 1-3.19 Carry out left-to-right, top-to-bottom, and return-sweep directionality on the printed page. 1-3.20 Distinguish among letters, words, and sentences.</p> <p>Standard 1-4 (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 1-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. 1-4.2 Use simple sentences in writing. 1-4.3 Use pictures, letters, or words to tell a story from beginning to end. 1-4.4 Use the conventions of written Standard American English. 1-4.5 Use proofreading skills to edit for the correct use of written Standard American English. 1-4.6 Use revision strategies to improve word choice in written work. 1-4.7 Use appropriate spacing between words. 1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.</p> <p>Standard 1-5 (Writing): The student will write for a variety of purposes and audiences.</p> <p>Indicators 1-5.2 Create narratives such as stories and journal entries about people, places, actions, or things. 1-5.3 Create written pieces that describe personal experiences, people, places, or things that use words that appeal to the senses.</p> <p>Standard 1-6 (Researching): The student will access and use information from a variety of sources.</p>



	<p>Indicators</p> <p>1-6.1 Generate how and why questions about a topic of interest.</p> <p>1-6.2 Use print sources of information such as books, newspapers, pictures, charts, and graphs and nonprint media to access information.</p> <p>1-6.3 Create categories such as plants and animals to classify information.</p> <p>1-6.4 Use the Internet with the aid of a teacher.</p> <p>1-6.5 Use complete sentences when orally presenting information.</p> <p>1-6.6 Generate one- and two-step oral directions.</p> <p>Social Studies</p> <p>Standard 1-3 (Government):</p> <p>The student will demonstrate an understanding of how government functions and how government affects families.</p> <p>Indicators</p> <p>1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.</p>
--	--

Notes: