

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

**Second Grade  
Developing Algebraic Thinking: Collecting and Sorting**

In this module, number patterns and repeating patterns are connected through number lines and number charts. Students develop a sense of numbers through experiences with repeated addition. Numbers up to 500 are investigated. Tables, Venn diagrams, simple graphs, bar graphs, and line plots are all used to display data that is gathered by asking questions about the collections in the kit and by asking questions about each other. Concepts of range and mode are introduced. Writing is an integral part of the lessons.

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

Send email to [mootb@clemson.edu](mailto: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, 4**

| Process Standards  | Content Standards  | Horizontal Connections   |
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| <p><b>Mathematics Standard 2-1 (Process):</b><br/>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>2-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>2-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>2-1.3 Explain and justify answers to simple problems.</p> <p>2-1.4 Analyze patterns by reasoning systematically.</p> <p>2-1.5 Generalize mathematical concepts.</p> <p>2-1.6 Use a variety of forms of mathematical communication.</p> <p>2-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>2-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p><b>Mathematics Standard 2-3 (Algebra):</b><br/>The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> <p><b>Indicators</b></p> <p>2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.</p> | <p><b>Mathematics Standard 2-6 ( Data Analysis and Probability):</b><br/>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> |

**Notes:**

| Vertical Connections   | Cross Curricular Connections  |
|--|---|
| <p><b>Grade 3</b><br/> <b>Standard 3-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 3-3.1 Create numeric patterns that involve whole-number operations.<br/> 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.<br/> 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.</p> <p><b>Grade 4</b><br/> <b>Standard 4-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.<br/> 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.<br/> 4-3.3 Use a rule to complete a sequence or a table.<br/> 4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations.<br/> 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p> <p><b>Grade 5</b><br/> <b>Standard 5-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.<br/> 5-3.2 Analyze patterns and functions with words, tables, and graphs.<br/> 5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/> The student will read and comprehend a variety of literary texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-1.1 Analyze a given literary text to make, revise, and confirm predictions.<br/> 2-1.3 Exemplify devices of figurative language (including simile) and sound devices (including onomatopoeia and alliteration).<br/> 2-1.5 Understand the effect of the author’s craft, such as word choice and the use of repetition, on the meaning of a given literary text.<br/> 2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/> 2-1.7 Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.<br/> 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.<br/> 2-1.9 Understand the characteristics of works of fiction (including fables, folktales, and tall tales) and works of nonfiction (including biographies).</p> <p><b>Standard 2-3 (Reading):</b><br/> The student will use word analysis and vocabulary strategies to read fluently.<br/> <b>Indicators</b><br/> 2-3.3 Recognize high-frequency words in context.<br/> 2-3.5 Recognize synonyms, antonyms, and homonyms in context.<br/> 2-3.7 Use a knowledge of spelling patterns and high-frequency words.<br/> 2-3.8 Analyze spelling patterns in context and parts of multisyllabic words such as onsets and rimes.</p> <p><b>Standard 2-4 (Writing):</b><br/> 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.<br/> <b>Indicators</b><br/> 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/> 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/> 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/> 2-4.4 Use the conventions of written Standard American English.<br/> 2-4.5 Use proofreading skills to edit for the correct use of</p> |



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|  | <p>written Standard American English.</p> <p>2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.</p> <p>2-4.7 Use appropriate spacing between words when writing on a page.</p> <p>2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> <p><b>Standard 2-5 (Writing):</b><br/>The student will write for a variety of purposes and audiences.</p> <p><b>Indicators</b></p> <p>2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.</p> <p><b>Standard 2-6 (Researching):</b><br/>The student will access and use information from a variety of sources.</p> <p><b>Indicators</b></p> <p>2-6.5 Use Standard American English when appropriate in conversations and discussions.</p> <p><b>Science</b></p> <p><b>Standard 2-1 (Scientific Inquiry):</b><br/>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><b>Indicators</b></p> <p>2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.</p> <p><b>Visual and Performing Arts</b></p> <p><b>Standard Grade 2 (Dance):</b><br/>Identifying and demonstrating movement elements and skills in performing dance.</p> <p><b>Indicators</b></p> <p>A. Demonstrate nonlocomotor movements.<br/>B. Demonstrate basic locomotor movements.<br/>F. Safely maintain personal and general space while moving.<br/>G. Start, change, and stop movement in response to a rhythm.</p> <p><b>Standard Grade 2 (Music):</b><br/>Listening to, analyzing, and describing music.</p> <p><b>Indicators</b></p> <p>A. Identify examples of simple music forms, including echo, motive, phrase, call and response, verse/refrain, AB and ABA.</p> <p><b>Standard Grade 2 (Visual Arts):</b><br/>Using knowledge of structures and functions.</p> <p><b>Indicators</b></p> <p>A. Identify elements and principles of design that are found in nature and those that have been created by human beings.</p> |
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**Big Idea: Patterns are in the world around us.**  
**Subconcept: Predictions can be made and verified**  
**Lessons 5, 6, 7**

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

**Notes:**

| Vertical Connections  | Cross Curricular Connections   |
|---|--|
| <p><b>Grade 3</b><br/> <b>Standard 3-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 3-3.1 Create numeric patterns that involve whole-number operations.<br/> 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p><b>Grade 4</b><br/> <b>Standard 4-3 (Algebra):</b><br/> 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..<br/> <b>Indicators</b><br/> 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.<br/> 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.</p> <p><b>Grade 5</b><br/> <b>Standard 5-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.<br/> 5-3.2 Analyze patterns and functions with words, tables, and graphs.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/> The student will read and comprehend a variety of literary texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/> 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.<br/> 2-1.9 Understand the characteristics of works of fiction (including fables, folktales, and tall tales) and works of nonfiction (including biographies).</p> <p><b>Standard 2-2 (Reading):</b><br/> The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p><b>Standard 2-3 (Reading):</b><br/> The student will use word analysis and vocabulary strategies to read fluently.<br/> <b>Indicators</b><br/> 2-3.3 Recognize high-frequency words in context.<br/> 2-3.7 Use a knowledge of spelling patterns and high-frequency words.</p> <p><b>Standard 2-4 (Writing):</b><br/> 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.<br/> <b>Indicators</b><br/> 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/> 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/> 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/> 2-4.4 Use the conventions of written Standard American English.<br/> 2-4.5 Use proofreading skills to edit for the correct use of written Standard American English.<br/> 2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.<br/> 2-4.7 Use appropriate spacing between words when writing on a page.<br/> 2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> <p><b>Standard 2-5 (Writing):</b><br/> The student will write for a variety of purposes and audiences.</p> |



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|  | <p><b>Indicators</b><br/>2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.</p> <p><b>Standard 2-6 (Researching):</b><br/>The student will access and use information from a variety of sources.</p> <p><b>Indicators</b><br/>2-6.5 Use Standard American English when appropriate in conversations and discussions.</p> <p><b>Science</b><br/><b>Standard 2-1 (Scientific Inquiry):</b><br/>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><b>Indicators</b><br/>2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.</p> |
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**Notes:**



**Big Idea: Patterns are in the world around us.**

**Subconcept: Patterns can be extended.**

**Lessons 8, 9, 10**

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

**Notes:**

| Vertical Connections  | Cross Curricular Connections  |
|---|---|
| <p><b>Grade 3</b><br/> <b>Standard 3-3 (Algebra):</b><br/> The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quality, and situations showing increase over time.<br/> <b>Indicators</b><br/> 3-3.1 Create numeric patterns that involve whole-number operations.<br/> 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.</p> <p><b>Grade 4</b><br/> <b>Standard 4-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.<br/> 4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.<br/> 4-3.3 Use a rule to complete a sequence or a table.<br/> 4-3.4 Translate among letters, symbols, and words to represent quantities in simple mathematical expressions or equations.<br/> 4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.</p> <p><b>Grade 5</b><br/> <b>Standard 5-3 (Algebra):</b><br/> 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.<br/> <b>Indicators</b><br/> 5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.<br/> 5-3.2 Analyze patterns and functions with words, tables, and graphs.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/> The student will read and comprehend a variety of literary texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/> 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.<br/> 2-1.9 Understand the characteristics of works of fiction (including fables, folktales, and tall tales) and works of nonfiction (including biographies).</p> <p><b>Standard 2-2 (Reading):</b><br/> The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p><b>Standard 2-3 (Reading):</b><br/> The student will use word analysis and vocabulary strategies to read fluently.<br/> <b>Indicators</b><br/> 2-3.3 Recognize high-frequency words in context.<br/> 2-3.7 Use a knowledge of spelling patterns and high-frequency words.</p> <p><b>Standard 2-4 (Writing):</b><br/> 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.<br/> <b>Indicators</b><br/> 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/> 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/> 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/> 2-4.4 Use the conventions of written Standard American English.<br/> 2-4.5 Use proofreading skills to edit for the correct use of written Standard American English.<br/> 2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.<br/> 2-4.7 Use appropriate spacing between words when writing on a page.<br/> 2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> <p><b>Standard 2-5 (Writing):</b><br/> The student will write for a variety of purposes and</p> |



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|  | <p>audiences.</p> <p><b>Indicators</b></p> <p>2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.</p> <p><b>Standard 2-6 (Researching):</b></p> <p>The student will access and use information from a variety of sources.</p> <p><b>Indicators</b></p> <p>2-6.5 Use Standard American English when appropriate in conversations and discussions.</p> |
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**Notes:**

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

**Subconcept: Data can be collected and displayed.**

**Lessons 11, 12, 13**

| Process Standards   | Content Standards  | Horizontal Connections   |
|---|--|--|
| <p><b>Mathematics</b><br/> <b>Standard 2-1 (Process):</b><br/>           The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.<br/> <b>Indicators</b><br/>           2-1.1 Apply substantive mathematical problem-solving strategies.<br/>           2-1.2 Generate conjectures and exchange mathematical ideas.<br/>           2-1.3 Explain and justify answers to simple problems.<br/>           2-1.4 Analyze patterns by reasoning systematically.<br/>           2-1.5 Generalize mathematical concepts.<br/>           2-1.6 Use a variety of forms of mathematical communication.<br/>           2-1.7 Generalize connections among mathematics, the environment, and other subjects.<br/>           2-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p><b>Mathematics</b><br/> <b>Standard 2-6 (Data Analysis and Probability):</b><br/>           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.<br/> <b>Indicators</b><br/>           2-6.1 Create survey questions to collect data.<br/>           2-6.2 Organize data in charts, pictographs, and tables.<br/>           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><b>Mathematics</b><br/> <b>Standard 2-3 (Algebra):</b><br/>           The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.</p> |

**Notes:**

| Vertical Connections  | Cross Curricular Connections   |
|---|--|
| <p><b>Grade 3</b><br/> <b>Standard 3-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 3-6.1 Apply a procedure to find the range of a data set.<br/> 3-6.2 Organize data in tables, bar graphs, and dot plots.<br/> 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots.<br/> 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.<br/> 3-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, or <i>impossible</i> to occur.</p> <p><b>Grade 4</b><br/> <b>Standard 4-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 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.</p> <p><b>Grade 5</b><br/> <b>Standard 5-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 5-6.1 Design a mathematical investigation to address a question.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/> The student will read and comprehend a variety of literary texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/> 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 2-3 (Reading):</b><br/> The student will use word analysis and vocabulary strategies to read fluently.<br/> <b>Indicators</b><br/> 2-3.3 Recognize high-frequency words in context.<br/> 2-3.7 Use a knowledge of spelling patterns and high-frequency words.</p> <p><b>Standard 2-4 (Writing):</b><br/> 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.<br/> <b>Indicators</b><br/> 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/> 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/> 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/> 2-4.4 Use the conventions of written Standard American English.<br/> 2-4.5 Use proofreading skills to edit for the correct use of written Standard American English.<br/> 2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.<br/> 2-4.7 Use appropriate spacing between words when writing on a page.<br/> 2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> <p><b>Standard 2-5 (Writing):</b><br/> The student will write for a variety of purposes and audiences.<br/> <b>Indicators</b><br/> 2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.</p> |



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|  | <p><b>Standard 2-6 (Researching):</b><br/>The student will access and use information from a variety of sources.</p> <p><b>Indicators</b></p> <p>2-6.1 Generate how and why questions about a topic of interest.</p> <p>2-6.2 Use a variety of print sources such as books, pictures, charts, graphs, diagrams, and picture dictionaries and nonprint media to access information.</p> <p>2-6.4 Use the Internet with the aid of a teacher.</p> <p>2-6.5 Use Standard American English when appropriate in conversations and discussions.</p> <p>2-6.6 Understand and follow multistep directions.</p> <p><b>Science</b></p> <p><b>Standard 2-1 (Scientific Inquiry):</b><br/>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><b>Indicators</b></p> <p>2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.</p> |
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**Notes:**

**Big Idea: Data can be collected about the world around us.**  
**Subconcept: Data can be analyzed and described.**  
**Lessons 14, 15, 16**

| Process Standards   | Content Standards  | Horizontal Connections  |
|---|--|---|
| <p><b>Mathematics</b><br/> <b>Standard 2-1 (Process):</b><br/>           The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.<br/> <b>Indicators</b><br/>           2-1.1 Apply substantive mathematical problem-solving strategies.<br/>           2-1.2 Generate conjectures and exchange mathematical ideas.<br/>           2-1.3 Explain and justify answers to simple problems.<br/>           2-1.4 Analyze patterns by reasoning systematically.<br/>           2-1.5 Generalize mathematical concepts.<br/>           2-1.6 Use a variety of forms of mathematical communication.<br/>           2-1.7 Generalize connections among mathematics, the environment, and other subjects.<br/>           2-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p><b>Mathematics</b><br/> <b>Standard 2-6 (Data Analysis and Probability):</b><br/>           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.<br/> <b>Indicators</b><br/>           2-6.1 Create survey questions to collect data.<br/>           2-6.2 Organize data in charts, pictographs, and tables.<br/>           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><b>Mathematics</b><br/> <b>Standard 2-3 (Algebra):</b><br/>           The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.<br/> <b>Indicators</b><br/>           2-3.4 Identify quantitative and qualitative change over time.<br/>           2-3.5 Analyze quantitative and qualitative change over time.</p> <p><b>Standard 2-5 (Measurement):</b><br/>           The student will demonstrate through the mathematical processes an understanding of the value of combinations of coins and bills and the measurement of length, weight, time, and temperature.<br/> <b>Indicators</b><br/>           2-5.3 Use appropriate tools to measure objects to the nearest whole unit: measuring length in centimeters, feet, and yards; measuring liquid volume in cups, quarts, and gallons; measuring weight in ounces and pounds; and measuring temperature on Celsius and Fahrenheit thermometers.</p> |

**Notes:**

| Vertical Connections   | Cross Curricular Connections  |
|--|---|
| <p><b>Grade 3</b><br/> <b>Standard 3-6 (Data Analysis and Probability):</b><br/>           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><b>Indicators</b><br/>           3-6.1 Apply a procedure to find the range of a data set.<br/>           3-6.2 Organize data in tables, bar graphs, and dot plots.<br/>           3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots.<br/>           3-6.4 Analyze dot plots and bar graphs to make predictions about populations.<br/>           3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.<br/>           3-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, or <i>impossible</i> to occur.</p> <p><b>Grade 4</b><br/> <b>Standard 4-6 (Data Analysis and Probability):</b><br/>           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><b>Indicators</b><br/>           4-6.1 Compare how data-collection methods impact survey results.<br/>           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.<br/>           4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1.<br/>           4-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, <i>impossible</i>, or <i>equally likely</i> to occur.</p> <p><b>Grade 5</b><br/> <b>Standard 5-6 (Data Analysis and Probability):</b><br/>           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><br/>           5-6.1 Design a mathematical investigation to address a question.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/>           The student will read and comprehend a variety of literary texts in print and nonprint formats.</p> <p><b>Indicators</b><br/>           2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/>           2-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 2-2 (Reading):</b><br/>           The student will read and comprehend a variety of informational texts in print and nonprint formats.</p> <p><b>Indicators</b><br/>           2-2.2 Analyze informational texts to draw conclusions and make inferences during classroom discussions.<br/>           2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information.</p> <p><b>Standard 2-3 (Reading):</b><br/>           The student will use word analysis and vocabulary strategies to read fluently.</p> <p><b>Indicators</b><br/>           2-3.3 Recognize high-frequency words in context.<br/>           2-3.7 Use a knowledge of spelling patterns and high-frequency words.</p> <p><b>Standard 2-4 (Writing):</b><br/>           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><br/>           2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/>           2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/>           2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/>           2-4.4 Use the conventions of written Standard American English.<br/>           2-4.5 Use proofreading skills to edit for the correct use of written Standard American English.<br/>           2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.<br/>           2-4.7 Use appropriate spacing between words when writing on a page.<br/>           2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> |

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|  | <p><b>Standard 2-5 (Writing):</b><br/>The student will write for a variety of purposes and audiences.</p> <p><b>Indicators</b></p> <p>2-5.2 Create narratives such as stories and journal entries that follow a logical sequence of events.</p> <p>2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.</p> <p><b>Standard 2-6 (Researching):</b><br/>The student will access and use information from a variety of sources.</p> <p><b>Indicators</b></p> <p>2-6.1 Generate how and why questions about a topic of interest.</p> <p>2-6.2 Use a variety of print sources such as books, pictures, charts, graphs, diagrams, and picture dictionaries and nonprint media to access information.</p> <p>2-6.4 Use the Internet with the aid of a teacher.</p> <p>2-6.5 Use Standard American English when appropriate in conversations and discussions.</p> <p>2-6.6 Understand and follow multistep directions.</p> <p><b>Science</b></p> <p><b>Standard 2-1 (Scientific Inquiry):</b><br/>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><b>Indicators</b></p> <p>2-1.1 Carry out simple scientific investigations to answer questions about familiar objects and events.</p> <p>2-1.2 Use tools safely, accurately, and appropriately when gathering specific data in US customary and metric units of measurement.</p> <p>2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.</p> <p>2-1.4 Infer explanations regarding scientific observations and experiences.</p> <p>2-1.5 Use appropriate safety procedures when conducting investigations.</p> |
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**Notes:**

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

**Subconcept: A story can be told about the data.**

**Lessons 17, 18, 19, 20**

| <b>Process Standards</b>  | <b>Content Standards</b>   | <b>Horizontal Connections</b>   |
|---|--|---|
| <p><b>Mathematics</b><br/> <b>Standard 2-1 (Process):</b><br/>           The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.<br/> <b>Indicators</b><br/>           2-1.1 Apply substantive mathematical problem-solving strategies.<br/>           2-1.2 Generate conjectures and exchange mathematical ideas.<br/>           2-1.3 Explain and justify answers to simple problems.<br/>           2-1.4 Analyze patterns by reasoning systematically.<br/>           2-1.5 Generalize mathematical concepts.<br/>           2-1.6 Use a variety of forms of mathematical communication.<br/>           2-1.7 Generalize connections among mathematics, the environment, and other subjects.<br/>           2-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p><b>Mathematics</b><br/> <b>Standard 2-6 (Data Analysis and Probability):</b><br/>           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.<br/> <b>Indicators</b><br/>           2-6.1 Create survey questions to collect data.<br/>           2-6.2 Organize data in charts, pictographs, and tables.<br/>           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><b>Mathematics</b><br/> <b>Standard 2-3 (Algebra):</b><br/>           The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.<br/> <b>Indicators</b><br/>           2-3.4 Identify quantitative and qualitative change over time.<br/>           2-3.5 Analyze quantitative and qualitative change over time.<br/> <br/> <b>Standard 2-5 (Measurement):</b><br/>           The student will demonstrate through the mathematical processes an understanding of the value of combinations of coins and bills and the measurement of length, weight, time, and temperature.<br/> <b>Indicators</b><br/>           2-5.3 Use appropriate tools to measure objects to the nearest whole unit: measuring length in centimeters, feet, and yards; measuring liquid volume in cups, quarts, and gallons; measuring weight in ounces and pounds; and measuring temperature on Celsius and Fahrenheit thermometers.</p> |

**Notes:**

| Vertical Connections  | Cross Curricular Connections  |
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| <p><b>Grade 3</b><br/> <b>Standard 3-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 3-6.1 Apply a procedure to find the range of a data set.<br/> 3-6.2 Organize data in tables, bar graphs, and dot plots.<br/> 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots.<br/> 3-6.4 Analyze dot plots and bar graphs to make predictions about populations.<br/> 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.<br/> 3-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, or <i>impossible</i> to occur.</p> <p><b>Grade 4</b><br/> <b>Standard 4-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 4-6.1 Compare how data-collection methods impact survey results.<br/> 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.<br/> 4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1.<br/> 4-6.6 Predict on the basis of data whether events are <i>likely</i>, <i>unlikely</i>, <i>certain</i>, <i>impossible</i>, or <i>equally likely</i> to occur.</p> <p><b>Grade 5</b><br/> <b>Standard 5-6 (Data Analysis and Probability):</b><br/> 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.<br/> <b>Indicators</b><br/> 5-6.1 Design a mathematical investigation to address a question.<br/> 5-6.3 Apply procedures to calculate the measures of tendency.<br/> 5-6.4 Interpret the meaning and application of the measures of central tendency.</p> | <p><b>Language Arts</b><br/> <b>Standard 2-1 (Reading):</b><br/> The student will read and comprehend a variety of literary texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-1.6 Analyze the details that support the expression of the main idea in a given literary text.<br/> 2-1.8 Carry out independent reading for extended periods of time to derive pleasure.</p> <p><b>Standard 2-2 (Reading):</b><br/> The student will read and comprehend a variety of informational texts in print and nonprint formats.<br/> <b>Indicators</b><br/> 2-2.2 Analyze informational texts to draw conclusions and make inferences during classroom discussions.<br/> 2-2.7 Use graphic features such as illustrations, graphs, charts, maps, and diagrams as sources of information.</p> <p><b>Standard 2-3 (Reading):</b><br/> The student will use word analysis and vocabulary strategies to read fluently.<br/> <b>Indicators</b><br/> 2-3.3 Recognize high-frequency words in context.<br/> 2-3.7 Use a knowledge of spelling patterns and high-frequency words.</p> <p><b>Standard 2-4 (Writing):</b><br/> 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.<br/> <b>Indicators</b><br/> 2-4.1 Generate ideas for writing using prewriting techniques such as creating lists, having discussions, and examining literary models.<br/> 2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.<br/> 2-4.3 Create a paragraph that follows a logical sequence and uses transitional words.<br/> 2-4.4 Use the conventions of written Standard American English.<br/> 2-4.5 Use proofreading skills to edit for the correct use of written Standard American English.<br/> 2-4.6 Use revision strategies to improve word choice and the logical progression of ideas in written work.<br/> 2-4.7 Use appropriate spacing between words when writing on a page.<br/> 2-4.8 Use correct letter formation when using manuscript or cursive writing.</p> |

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