

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

**Grade Five
Developing Algebraic Thinking: Steps and Distance**

In this module, repeating and growing patterns are investigated. Variables are used to write mathematical expressions. Data is collected with the use of pedometers. Data displays include line plots, bar graphs, stem and leaf plots, and line graphs. Sets of data are analyzed for range, mean, median, and mode. 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 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 analyzed and described.

Lessons 1, 2, 3

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

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (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>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>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.</p> <p>Indicators</p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.2 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>Mathematics Standard 5-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions.</p> <p>Indicators</p> <p>5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.</p> <p>5-2.9 Apply divisibility rules for 3, 6, and 9.</p>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities. Indicators 6-3.1 Analyze numeric and algebraic patterns and pattern relationships.</p> <p>Grade 7 Standard 7-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of proportional relationships. Indicators 7-3.1 Analyze geometric patterns and pattern relationships.</p> <p>Grade 8 Standard 8-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions. Indicators 8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.</p>	<p>Language Arts Standard 5-2 (Reading) The student will read and comprehend a variety of informational texts in print and nonprint formats. Indicators 5-2.2 Analyze informational texts to draw conclusions and make inferences.</p> <p>Standard 5-4 (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 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p> <p>Visual and Performing Arts Standard I. (Technique) Identifying and demonstrating movement elements and skills in performing dance. Indicators Demonstrate strength, flexibility, agility, and coordination in locomotor and nonlocomotor movements.</p>

Notes:



Big Idea: Patterns are in the world around us.

Subconcept: Rules can be represented with words and variables.

Lessons 4, 5, 6

Focus Question: In what ways can verbal descriptions aid in understanding variables?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators 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>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts. Indicators 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>	<p>Mathematics Standard 5-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions. Indicators 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>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities. Indicators 6-3.1 Analyze numeric and algebraic patterns and pattern relationships.</p> <p>Grade 7 Standard 7-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of proportional relationships. Indicators 7-3.1 Analyze geometric patterns and pattern relationships.</p> <p>Grade 8 Standard 8-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions. 8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.</p>	<p>Language Arts Standard 5-2 (Reading) The student will read and comprehend a variety of informational texts in print and nonprint formats. Indicators 5-2.2 Analyze informational texts to draw conclusions and make inferences.</p> <p>Standard 5-4 (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 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p>

Notes:

Big Idea: Patterns are in the world around us.

Subconcept: Functions can be represented in a variety of ways.

Lessons 7, 8, 9, 10

Focus Question: What connections can be made between function generator machines and tables?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (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>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>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.</p> <p>Indicators</p> <p>5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.</p> <p>5-3.2 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>Mathematics Standard 5-2 (Numbers and Operations): The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions.</p> <p>Indicators</p> <p>5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.</p> <p>5-2.9 Apply divisibility rules for 3, 6, and 9.</p> <p>Standard 5-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of congruency, spatial relationships, and relationships among the properties of quadrilaterals.</p> <p>Indicators</p> <p>5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.</p> <p>Standard 5-5 (Measurement): 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>Indicators</p> <p>5-5.4 Apply formulas to determine the perimeters and areas of triangles, rectangles, and parallelograms.</p>

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities. Indicators 6-3.1 Analyze numeric and algebraic patterns and pattern relationships.</p> <p>Grade 7 Standard 7-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of proportional relationships. Indicators 7-3.1 Analyze geometric patterns and pattern relationships.</p> <p>Grade 8 Standard 8-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions. Indicators 8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.</p>	<p>Language Arts Standard 5-2 (Reading) The student will read and comprehend a variety of informational texts in print and nonprint formats. Indicators 5-2.2 Analyze informational texts to draw conclusions and make inferences.</p> <p>Standard 5-4 (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 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p>

Notes:

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

Subconcept: A plan to collect data can be developed.

Lessons 11, 12, 13

Focus Question: In what ways are different averages used when comparing data?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (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>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>Mathematics Standard 5-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability.</p> <p>Indicators</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>5-6.3 Apply procedures to calculate the measures of central tendency (mean, median, and mode).</p> <p>5-6.4 Interpret the meaning and application of the measures of central tendency.</p>	<p>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.</p> <p>Indicators</p> <p>5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p> <p>Standard 5-5 (Measurement): 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>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample. Indicators 6-6.1 Predict the characteristics of one population based on the analysis of sample data. 6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate. 6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.</p> <p>Grade 7 Standard 7-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples. Indicators 7-6.1 Predict the characteristics of two populations based on the analysis of sample data. 7-6.2 Organize data in box plots or circle graphs as appropriate. 7-6.3 Apply procedures to calculate the interquartile range. 7-6.4 Interpret the interquartile range for data.</p> <p>Grade 8 Standard 8-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample. Indicators 8-6.1 Generalize the relationship between two sets of data by using scatterplots and lines of best fit. 8-6.2 Organize data in matrices or scatterplots as appropriate.</p>	<p>Language Arts Standard 5-1 (Reading) The student will read and comprehend a variety of literary texts in print and nonprint formats. Indicators 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>Standard 5-4 (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 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p> <p>Science Standard 5-1 (Scientific Inquiry): The student will demonstrate an understanding of scientific inquiry, including the foundations of technological design and the processes, skills, and mathematical thinking necessary to conduct a controlled scientific investigation. Indicators 5-1.1 Identify questions suitable for generating a hypothesis. 5-1.3 Plan and conduct controlled scientific investigations, manipulating one variable at a time. 5-1.4 Use appropriate tools and instruments (including a timing device and a 10x magnifier) safely and accurately when conducting a controlled scientific investigation. 5-1.6 Evaluate results of an investigation to formulate a valid conclusion based on evidence and communicate the findings of the evaluation in oral or written form. 5-1.7 Use a simple technological design process to develop a solution or a product, communicating the design by using descriptions, models, and drawings. 5-1.8 Use appropriate safety procedures when conducting investigations.</p>



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

Subconcept: Data can be analyzed and described.

Lessons 14, 15, 16

Focus Question: Why do data collection methods affect the results of an investigation?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (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>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>Mathematics Standard 5-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability.</p> <p>Indicators</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>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.</p> <p>Indicators</p> <p>5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p> <p>Standard 5-5 (Measurement): 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>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample. Indicators 6-6.1 Predict the characteristics of one population based on the analysis of sample data. 6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate. 6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.</p> <p>Grade 7 Standard 7-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples. Indicators 7-6.1 Predict the characteristics of two populations based on the analysis of sample data. 7-6.2 Organize data in box plots or circle graphs as appropriate. 7-6.3 Apply procedures to calculate the interquartile range. 7-6.4 Interpret the interquartile range for data.</p> <p>Grade 8 Standard 8-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample.</p> <p>8-6.1 Generalize the relationship between two sets of data by using scatterplots and lines of best fit. 8-6.2 Organize data in matrices or scatterplots as appropriate.</p>	<p>Language Arts Standard 5-2 (Reading) The student will read and comprehend a variety of informational texts in print and nonprint formats. Indicators 5-2.2 Analyze informational texts to draw conclusions and make inferences. 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>Standard 5-4 (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 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p> <p>Science Standard 5-1 (Scientific Inquiry): The student will demonstrate an understanding of scientific inquiry, including the foundations of technological design and the processes, skills, and mathematical thinking necessary to conduct a controlled scientific investigation. Indicators 5-1.1 Identify questions suitable for generating a hypothesis. 5-1.2 Identify independent (manipulated), dependent (responding), and controlled variables in an experiment. 5-1.3 Plan and conduct controlled scientific investigations, manipulating one variable at a time. 5-1.4 Use appropriate tools and instruments (including a timing device and a 10x magnifier) safely and accurately when conducting a controlled scientific</p>



	<p>investigation.</p> <p>5-1.5 Construct a line graph from recorded data with correct placement of independent (manipulated) and dependent (responding) variables.</p> <p>5-1.6 Evaluate results of an investigation to formulate a valid conclusion based on evidence and communicate the findings of the evaluation in oral or written form.</p> <p>5-1.7 Use a simple technological design process to develop a solution or a product, communicating the design by using descriptions, models, and drawings.</p> <p>5-1.8 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

Focus Question: In what way does an investigation answer questions and create more questions?

Process Standards	Content Standards	Horizontal Connections
<p>Mathematics Standard 5-1 (Process): The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators 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>Mathematics Standard 5-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability. Indicators 5-6.1 Design a mathematical investigation to address a question. 5-6.2 Analyze how data-collection methods affect the nature of the data set. 5-6.3 Apply procedures to calculate the measures of central tendency (mean, median, and mode). 5-6.4 Interpret the meaning and application of the measures of central tendency.</p>	<p>Mathematics Standard 5-3 (Algebra): The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts. Indicators 5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.</p> <p>Standard 5-5 (Measurement): 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>

Notes:

Vertical Connections	Cross Curricular Connections
<p>Grade 6 Standard 6-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample. Indicators 6-6.1 Predict the characteristics of one population based on the analysis of sample data. 6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate. 6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.</p> <p>Grade 7 Standard 7-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples. Indicators 7-6.1 Predict the characteristics of two populations based on the analysis of sample data. 7-6.2 Organize data in box plots or circle graphs as appropriate. 7-6.3 Apply procedures to calculate the interquartile range. 7-6.4 Interpret the interquartile range for data.</p> <p>Grade 8 Standard 8-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample. Indicators: 8-6.1 Generalize the relationship between two sets of data by using scatterplots and lines of best fit. 8-6.2 Organize data in matrices or scatterplots as appropriate.</p>	<p>Language Arts Standard 5-4 (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 5-4.1 Use prewriting techniques to organize written works. 5-4.2 Use complete sentences in a variety of types (including simple, compound, and complex sentences) in writing. 5-4.3 Create multiple-paragraph compositions that include a central idea with supporting details and use appropriate transitions between paragraphs. 5-4.4 Use the conventions of written Standard American English (including those regarding irregular comparative and superlative adjectives such as <i>good</i>, <i>better</i>, <i>best</i>; irregular adverbs; interjections; past participles of commonly misused verbs; and subject-verb and pronoun-antecedent agreement with collective nouns). 5-4.5 Use proofreading skills to edit for the correct use of written Standard American English. 5-4.6 Use revision strategies to improve word choice and the organization and development of ideas in written works.</p> <p>Standard 5-5 (Writing) The student will write for a variety of purposes and audiences. Indicators 5-5.3 Create written descriptions using precise language and vivid details.</p> <p>Standard 5-6 (Writing) The student will access and use information from a variety of sources. Indicators 5-6.1 Clarify and refine a research topic. 5-6.6 Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose. 5-6.7 Use appropriate organizational strategies to prepare written works and oral and visual presentations. 5-6.8 Select appropriate graphics, in print or electronic form, to support written works and oral and visual presentations.</p> <p>Science Standard 5-1 (Scientific Inquiry): The student will demonstrate an understanding of scientific</p>



	<p>inquiry, including the foundations of technological design and the processes, skills, and mathematical thinking necessary to conduct a controlled scientific investigation.</p> <p>Indicators</p> <p>5-1.1 Identify questions suitable for generating a hypothesis.</p> <p>5-1.2 Identify independent (manipulated), dependent (responding), and controlled variables in an experiment.</p> <p>5.1.4 Use appropriate tools and instruments (including a timing device and a 10x magnifier) safely and accurately when conducting a controlled scientific investigation.</p> <p>5.1.6 Evaluate results of an investigation to formulate a valid conclusion based on evidence and communicate the findings of the evaluation in oral or written form.</p> <p>5.1.7 Use a simple technological design process to develop a solution or a product, communicating the design by using descriptions, models, and drawings.</p> <p>5.1.8 Use appropriate safety procedures when conducting investigations.</p>
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Notes: