

Correlation to South Carolina Academic Standards Mathematics – 2007

Kindergarten Developing Geometric Logic: Towers and Trails

In this module, shape collections are sorted by observable attributes and compared. Students explore the building of three-dimensional structures. Students draw geometric figures based on a mental image and recognize geometric shapes in different positions. Symmetry, direction, and distance are explored with a variety of manipulatives. Location of objects on maps and grids is investigated. A class journal is kept throughout the geometry 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: Geometry is a means to describe the physical world.

Subconcept: Three-dimensional shapes can be analyzed and described.

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

Focus Question: In what ways can two-dimensional figures be used to describe three-dimensional shapes?

| Process Standards | Content Standards | Horizontal Connections |
|--|--|---|
| <p>Mathematics Standard K-1 (Process): The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators K-1.1 Apply substantive mathematical problem-solving strategies. K-1.2 Generate conjectures and exchange mathematical ideas. K-1.3 Explain and justify answers to simple problems. K-1.4 Analyze patterns by reasoning systematically. K-1.5 Generalize mathematical concepts. K-1.6 Use a variety of forms of mathematical communication. K-1.7 Generalize connections among mathematics, the environment, and other subjects. K-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p>Mathematics Standard K-4 (Geometry): The student will demonstrate through the mathematical processes an emerging sense of two-and three-dimensional geometric shapes and relative positions in space. Indicators K-4.1 Identify the two-dimensional geometric shapes square, circle, triangle, and rectangle and the three-dimensional shapes cube, sphere, and cylinder. K-4.2 Represent two-dimensional geometric shapes.</p> | <p>Mathematics Standard K-3 (Algebra): The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes Indicators K-3.4 Classify objects according to one or more attributes such as color, size, shape and thickness.</p> <p>Standard K-5 (Measurement): The student will demonstrate through the mathematical processes an emerging sense of coin values and the measurement concepts of length, weight, time, and temperature. Indicators K-5.2 Compare the lengths of two objects, both directly and indirectly, to order objects according to length.</p> |

Notes:

| Vertical Connections | Cross Curricular Connections |
|--|---|
| <p>Grade 1 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 1-4.1 Identify the three-dimensional geometric shapes prism, pyramid, and cone.</p> <p>Grade 2 Standard 2-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes. Indicators 2-4.1 Analyze the three-dimensional shapes spheres, cubes, cylinders, prisms, pyramids, and cones according to the number and shapes of the faces, edges, corners, and bases of each.</p> <p>Grade 3 Standard 3-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes. Indicators 3-4.2 Classify polygons as either triangles, quadrilaterals, pentagons, hexagons, or octagons according to the number of their sides.</p> | <p>Language Arts Standard K-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators K-3.3 Use vocabulary acquired from a variety of sources.</p> <p>Standard K-4 (Writing): The student will begin to 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 K-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. K-4.2 Generate complete sentences orally. K-4.3 Use pictures, letters, or words to tell a story from beginning to end. K-4.6 Use strategies to revise small group or whole class writing with teacher support. K-4.7 Use upper case and lower case letters. K-4.8 Use appropriate letter formation when printing.</p> <p>Standard K-5 (Writing): The student will begin to write for a variety of purposes and audiences. Indicators K-5.3 Use drawings, letters, or words to create descriptions of personal experiences, people, places, or things.</p> <p>Standard K-6 (Researching): The student will begin to access and use information from a variety of sources. Indicators K-6.3 Classify information by constructing categories such as living and nonliving things. K-6.4 Use complete sentence when orally communicating with others. K-6.5 Understand and follow one- and two-step oral directions.</p> <p>Science Standard K-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. Indicators K-1.1 Identify observed objects or events by using the senses.</p> <p>Standard K-5 (Exploring Matter): The student will demonstrate the understanding that objects</p> |



| | |
|--|---|
| | <p>can be described by their observable properties. (Physical Science)</p> <p>Indicators K-5.1 Classify objects by observable properties.</p> <p>Social Studies Standard K-4 (Citizenship): The student will demonstrate an understanding of good citizenship.</p> <p>Indicators K-4.2 Demonstrate good citizenship in classroom behaviors, including taking personal responsibility, cooperating and respecting others, taking turns and sharing, and working with others to solve problems.</p> |
|--|---|

Notes:



Big Idea: Geometry is a means to describe the physical world.

Subconcept: Two-dimensional shapes can be analyzed and described.

Lessons 7, 8, 9, 10, 11, 12

Focus Question: What attributes can be used to describe two-dimensional figures?

| Process Standards | Content Standards | Horizontal Connections |
|--|---|--|
| <p>Mathematics Standard K-1 (Process): The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators K-1.1 Apply substantive mathematical problem-solving strategies. K-1.2 Generate conjectures and exchange mathematical ideas. K-1.3 Explain and justify answers to simple problems. K-1.4 Analyze patterns by reasoning systematically. K-1.5 Generalize mathematical concepts. K-1.6 Use a variety of forms of mathematical communication. K-1.7 Generalize connections among mathematics, the environment, and other subjects. K-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p>Mathematics Standard K-4 (Geometry): The student will demonstrate through the mathematical processes an emerging sense of two- and three-dimensional geometric shapes and relative positions in space. Indicators K-4.1 Identify the two-dimensional geometric shapes square, circle, triangle, and rectangle and the three-dimensional shapes cube, sphere, and cylinder. K-4.2 Represent two-dimensional geometric shapes.</p> | <p>Mathematics Standard K-3 (Algebra): The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes. Indicators K-3.2 Analyze simple repeating and growing relationships to extend patterns. K-3.4 Classify objects according to one or more attributes such as color, size, shape, and thickness. Standard K-5 (Measurement): The student will demonstrate through the mathematical processes an emerging sense of coin values and the measurement concepts of length, weight, time, and temperature. Indicators K-5.2 Compare the lengths of two objects, both directly and indirectly, to order objects according to length.</p> |

Notes:

| Vertical Connections | Cross Curricular Connections |
|--|---|
| <p>Grade 1 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. 1-4.3 Classify two-dimensional shapes as polygons or nonpolygons.</p> <p>Grade 2 Standard 2-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes. Indicators 2-4.3 Predict the results of combining and subdividing polygons and circles.</p> <p>Grade 3 Standard 3-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes. Indicators 3-4.2 Classify polygons as either triangles, quadrilaterals, pentagons, hexagons, or octagons according to the number of their sides.</p> | <p>Language Arts Standard K-3 (Reading): The student will learn to read by applying appropriate skills and strategies. Indicators K-3.3 Use vocabulary acquired from a variety of sources.</p> <p>Standard K-4 (Writing): The student will begin to 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 K-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. K-4.2 Generate complete sentences orally. K-4.3 Use pictures, letters, or words to tell a story from beginning to end. K-4.6 Use strategies to revise small group or whole class writing with teacher support. K-4.7 Use upper case and lower case letters. K-4.8 Use appropriate letter formation when printing.</p> <p>Standard K-5 (Writing): The student will begin to write for a variety of purposes and audiences. Indicators K-5.1 Identify a penny, a nickel, a dime, a quarter, and a dollar and the value of each. K-5.3 Use drawings, letters, or words to create descriptions of personal experiences, people, places, or things.</p> <p>Standard K-6 (Researching): The student will begin to access and use information from a variety of sources. Indicators K-6.2 Interpret data in graphic displays in the form of drawings and pictures. K-6.3 Classify information by constructing categories such as living and nonliving things. K-6.4 Use complete sentence when orally communicating with others. K-6.5 Understand and follow one- and two-step oral directions.</p> <p>Science Standard K-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. Indicators</p> |



| | |
|--|--|
| | <p>K-1.1 Identify observed objects or events by using the senses.</p> <p>Standard K-5 (Exploring Matter): The student will demonstrate the understanding that objects can be described by their observable properties. (Physical Science)</p> <p>Indicators K-5.1 Classify objects by observable properties.</p> <p>Social Studies Standard K-4 (Citizenship): The student will demonstrate an understanding of good citizenship.</p> <p>Indicators K-4.2 Demonstrate good citizenship in classroom behaviors, including taking personal responsibility, cooperating and respecting others, taking turns and sharing, and working with others to solve problems.</p> |
|--|--|

Notes:



Big Idea: Geometry is a means to describe the physical world.
Subconcept: Geometry can be related to other areas of mathematics.
Lessons 13, 14, 15, 16

Focus Question: What attributes can be used to sort two-dimensional figures?

| Process Standards | Content Standards | Horizontal Connections |
|--|--|--|
| <p>Mathematics Standard K-1 (Process): The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. Indicators K-1.1 Apply substantive mathematical problem-solving strategies. K-1.2 Generate conjectures and exchange mathematical ideas. K-1.3 Explain and justify answers to simple problems. K-1.4 Analyze patterns by reasoning systematically. K-1.5 Generalize mathematical concepts. K-1.6 Use a variety of forms of mathematical communication. K-1.7 Generalize connections among mathematics, the environment, and other subjects. K-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p>Mathematics Standard K-4 (Geometry): The student will demonstrate through the mathematical processes an emerging sense of two-and three-dimensional geometric shapes and relative positions in space. Indicators K-4.1 Identify the two-dimensional geometric shapes square, circle, triangle, and rectangle and the three-dimensional shapes cube, sphere, and cylinder. K-4.2 Represent two-dimensional geometric shapes.</p> | <p>Mathematics Standard K-2 (Number and Operations): The student will demonstrate through the mathematical processes an emerging sense of quantity and numeral relationships, sets, and place values Indicators K-2.1 Recall numbers, counting forward through 99 and backward from 10. K-2.3 Compare sets of no more than 31 objects by using the terms <i>more than</i>, <i>less than</i>, and <i>the same as</i>. Standard K-3 (Algebra): The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes Indicators K-3.4 Classify objects according to one or more attributes such as color, size, shape, and thickness. Standard K-6 (Data Analysis and Probability): The student will demonstrate through the mathematical processes an emerging sense of organizing and interpreting data. Indicators K-6.1 Organize data in graphic displays in the form of drawings and pictures. K-6.2 Interpret data in graphic displays in the form of drawings and pictures.</p> |

Notes:

| Vertical Connections | Cross Curricular Connections |
|---|--|
| <p>Grade 1 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. 1-4.4 Identify a line of symmetry.</p> <p>Grade 2 Standard 2-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes. Indicators 2-4.2 Identify multiple lines of symmetry.</p> <p>Grade 3 Standard 3-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes. Indicators 3-4.2 Classify polygons as either triangles, quadrilaterals, pentagons, hexagons, or octagons according to the number of their sides.</p> | <p>Language Arts Standard K-1 (Reading): The student will begin to read and comprehend a variety of literary texts in print and nonprint formats. Indicators: K-1.1 Use pictures and words to make predictions regarding a story read aloud. K-1.8 Carry out independent reading for pleasure.</p> <p>Standard K-4 (Writing): The student will begin to 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 K-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. K-4.2 Generate complete sentences orally. K-4.6 Use strategies to revise small group or whole class writing with teacher support. K-4.7 Use upper case and lower case letters. K-4.8 Use appropriate letter formation when printing.</p> <p>Standard K-5 (Writing): The student will begin to write for a variety of purposes and audiences. Indicators K-5.1 Identify a penny, a nickel, a dime, a quarter, and a dollar and the value of each. K-5.3 Use drawings, letters, or words to create descriptions of personal experiences, people, places, or things.</p> <p>Standard K-6 (Researching): The student will begin to access and use information from a variety of sources. Indicators K-6.3 Classify information by constructing categories such as living and nonliving things. K-6.4 Use complete sentence when orally communicating with others. K-6.5 Understand and follow one- and two-step oral directions.</p> <p>Science Standard K-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. Indicators K-1.1 Identify observed objects or events by using the senses.</p> |



| | |
|--|--|
| | <p>Standard K-5 (Exploring Matter): The student will demonstrate the understanding that objects can be described by their observable properties. (Physical Science)</p> <p>Indicators K-5.1 Classify objects by observable properties.</p> <p>Social Studies Standard K-4 (Citizenship): The student will demonstrate an understanding good citizenship.</p> <p>Indicators K-4.2 Demonstrate good citizenship in classroom behaviors, including taking personal responsibility, cooperating and respecting others, taking turns and sharing, and working with others to solve problems.</p> |
|--|--|

Notes:

Big Idea: Geometry is a means to describe the physical world.

Subconcept: Conclusions can be drawn about the position and location of shapes.

Lessons 17, 18, 19, 20

Focus Question: In what ways can directional words be used to describe the location of the classroom?

| Process Standards | Content Standards | Horizontal Connections |
|---|---|---|
| <p>Standard K-1 (Process): The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.</p> <p>Indicators</p> <p>K-1.1 Apply substantive mathematical problem-solving strategies.</p> <p>K-1.2 Generate conjectures and exchange mathematical ideas.</p> <p>K-1.3 Explain and justify answers to simple problems.</p> <p>K-1.4 Analyze patterns by reasoning systematically.</p> <p>K-1.5 Generalize mathematical concepts.</p> <p>K-1.6 Use a variety of forms of mathematical communication.</p> <p>K-1.7 Generalize connections among mathematics, the environment, and other subjects.</p> <p>K-1.8 Use multiple informal representations to convey mathematical ideas.</p> | <p>Mathematics</p> <p>Standard K-4 (Geometry): The student will demonstrate through the mathematical processes an emerging sense of two- and three-dimensional geometric shapes and relative positions in space.</p> <p>Indicators</p> <p>K-4.3 Use the positional words near, far, below, above, beside, next to, across from, and between to describe the location of an object.</p> <p>K-4.4 Use the directional words left and right to describe movement.</p> | <p>Mathematics</p> <p>Standard K-2 (Number and Operations): The student will demonstrate through the mathematical processes an emerging sense of quantity and numeral relationships, sets, and place values</p> <p>Indicators</p> <p>K-2.1 Recall numbers, counting forward through 99 and backward from 10.</p> <p>K-2.3 Compare sets of no more than 31 objects by using the terms more than, less than, and the same as.</p> <p>Standard K-3 (Algebra): The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes</p> <p>Indicators</p> <p>K-3.4 Classify objects according to one or more attributes such as color, size, shape, and thickness.</p> |

Notes:

| Vertical Connections | Cross Curricular Connections |
|--|--|
| <p>Grade 1 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 1-4.5 Use the positional and directional terms <i>north</i>, <i>south</i>, <i>east</i>, and <i>west</i> to describe location and movement.</p> <p>Grade 2 Standard 2-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes. Indicators 2-4.1 Analyze the three-dimensional shapes spheres, cubes, cylinders, prisms, pyramids, and cones according to the number and shape of the faces, edges, corners, and bases of each.</p> <p>Grade 3 Standard 3-4 (Geometry): The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes. Indicators 3-4.8 Predict the results of one transformation—either slide, flip, or turn—of a geometric shape.</p> | <p>Language Arts Standard K-4 (Writing): The student will begin to 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 K-4.1 Generate ideas for writing by using techniques such as participating in conversations and looking at pictures. K-4.2 Generate complete sentences orally.</p> <p>Standard K-6 (Researching): The student will begin to access and use information from a variety of sources. Indicators K-6.2 Understand that information can be found in print sources such as books, pictures, simple graphs, and charts and nonprint media such as videos, television, films, radio and the Internet. K-6.3 Classify information by constructing categories such as living and nonliving things. K-6.4 Use complete sentences when orally communicating with others. K-6.5 Understand and follow one- and two-step oral directions.</p> <p>Social Studies Standard K-4 (Citizenship): The student will demonstrate an understanding good citizenship. Indicators K-4.2 Demonstrate good citizenship in classroom behaviors, including taking personal responsibility, cooperating and respecting others, taking turns and sharing, and working with others to solve problems.</p> <p>Standard K-5 (Surroundings): The student will demonstrate an understanding of his or her surroundings. Indicators K-5.2 Provide examples of personal connections to places, including immediate surroundings, home, school, and neighborhood. (G) K-5.3 Construct a simple map. (G)</p> |

