



# **Pine Grove Area**

## SCHOOL DISTRICT

**Mathematics**

**Grade 5**

**August 20, 2009**

### **I. PHILOSOPHY**

The fifth grade mathematics course of the Pine Grove Area School District has been structured to reinforce and extend the core concepts: place value, problem-solving, numbers and operations, fractions, geometry, algebraic concepts, data analysis, measurement, and probability. These skills will be practiced and explored in order for students to enhance their confidence in their reasoning and problem solving in today's technological society. The course will allow for the accommodation of many learning styles, motivational levels, and academic abilities.

## **II. CORE CONCEPTS**

1. Place Value: Read, write, compare, order, and round whole numbers and decimals from millions through hundredths.
2. Problem-Solving: Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.
3. Numbers and Operations: Define, list, and identify primes, composites, factors, multiples, and negatives. Add, subtract, multiply, divide, and estimate numbers from millions through hundredths.
4. Fractions: Model, identify, compare, order, add and subtract fractions and mixed numbers with like and unlike denominators.
5. Geometry: Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry
6. Algebraic Concepts: Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.
7. Data Analysis: Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.
8. Measurement: Select appropriate units, convert, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular polygons.
9. Probability: Predict and determine the probability of specific outcomes for simple events.

### III. COURSE OF STUDY

A. Course Name: *Grade 5 Math*

B. Grade Level: 5

C. Length of Course: *Full year*

D. Academic Level: 5

E. Credits: none

F. Prerequisites: none

G. Course Description: *This mathematics course is intended for all fifth grade students. It is designed to reinforce the Pennsylvania State Mathematics Standards. Accommodations and modifications will be made for all students.*

**IV. CONTENT:** Grade 5 Math

**CORE CONCEPT 1:** Place Value

**MAJOR OBJECTIVE:** Read, write, compare, order, and round whole numbers and decimals from millions through hundredths.

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.1.5.A</b> Use expanded notation to represent whole numbers or decimals.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.1.1</b> Use expanded notation to represent whole numbers or decimals (whole numbers less than 10,000,000 and decimals through hundredths).</p> <p><b>M5.A.1.2.1</b> Match the standard form to the word form of decimal numbers through the hundredths.</p> <p><b>M5.A.1.2.2</b> Identify the place value of a digit (from millions through hundredths).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (place-value chart)</p>
<p><b>PA Standard 2.1.5.D</b> Use models to represent fractions and decimals.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.3.1</b> Compare whole numbers through 9 digits using the words more, less, equal, least, most, greater than, less than or the symbols &lt;, &gt;, =.</p> <p><b>M5.A.1.3.2</b> Compare and/or order decimals through the hundredths. (Limit sets for ordering to no more than 4 numbers.)</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessments</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (Decimal grids and pictures)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 1:** Place Value

**MAJOR OBJECTIVE:** Read, write, compare, order, and round whole numbers and decimals from millions through hundredths.

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.4.5.A</b> Compare quantities and magnitudes of numbers.	Teacher will guide students to:  <b>M5.A.1.3.1</b> Compare whole numbers through 9 digits using the words more, less, equal, least, most, greater than, less than or the symbols $<$ , $>$ , $=$ .  <b>M5.A.1.3.2</b> Compare and/or order decimals through the hundredths. (Limit sets for ordering to no more than 4 numbers.)	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessments</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Decimal grids and pictures)
<b>PA Standard 2.11.5.A</b> Make comparisons of numbers (e.g., more, less, same, least, most, greater than, less than).	Teacher will guide students to:  <b>M5.A.1.3.1</b> Compare whole numbers through 9 digits using the words more, less, equal, least, most, greater than, less than or the symbols $<$ , $>$ , $=$ .  <b>M5.A.1.3.2</b> Compare and/or order decimals through the hundredths. (Limit sets for ordering to no more than 4 numbers.)	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessments</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Decimal grids and pictures)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 1:** Place Value

**MAJOR OBJECTIVE:** Read, write, compare, order, and round whole numbers and decimals from millions through hundredths.

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.2.5.D</b> Demonstrate the ability to round numbers.	Teacher will guide students to:  <b>M5.A.3.1.1</b> Round whole numbers through millions and decimals through hundredths.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.2.5.A</b> Create and solve word problems involving addition, subtraction, multiplication and division of whole numbers.	Teacher will guide students to:  <b>M5.A.2.1.1</b> Solve problems involving addition, subtraction, multiplication and division of whole numbers (multipliers up to 2 digits – divisors one digit) and decimals including money (answer through hundredths – no divisors with decimals).  <b>M5.B.2.2.3</b> Solve problems involving weight, time, temperature, length and capacity (with the same units throughout - limited to 3 digits).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.2.5.C</b> Develop and apply algorithms to solve word problems that involve addition, subtraction, and/or multiplication with fractions and mixed numbers that include like and unlike denominators.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.2.1.3</b> Choose the correct operation(s) to solve a problem (no more than 2 operations).</p> <p><b>M5.A.3.2.1</b> Use addition, subtraction, multiplication and division to compute accurately without a calculator (multipliers up to 2 digits, single-digit divisors or multiples of 10 – whole numbers through thousands and decimals through hundredths - no divisors with decimals).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	<p>Textbook resources</p> <p>Web sites</p> <p>Notebook</p> <p>Supplemental materials (PSSA Pointers Sheet, Rubric in advance)</p>
<p><b>PA Standard 2.1.5.C</b> Demonstrate that mathematical operations can represent a variety of problem situations.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.2.1.1</b> Solve problems involving addition, subtraction, multiplication and division of whole numbers (multipliers up to 2 digits – divisors one digit) and decimals including money (answer through hundredths – no divisors with decimals).</p> <p><b>M5.A.2.1.3</b> Choose the correct operation(s) to solve a problem (no more than 2 operations).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	<p>Textbook resources</p> <p>Web sites</p> <p>Notebook</p> <p>Supplemental materials (PSSA Pointers Sheet, Rubric in advance)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.2.5.E</b> Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.3.1.2</b> Use estimation to solve problems involving whole numbers and/or decimals (up to 2-digit multipliers, single-digit divisors or multiples of 10; whole numbers through thousands and decimals through hundredths).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	<p>Textbook resources</p> <p>Web sites</p> <p>Notebook</p> <p>Supplemental materials (PSSA Pointers Sheet, Rubric in advance)</p>
<p><b>PA Standard 2.2.5.B</b> Develop and apply algorithms to solve word problems that involve addition, subtraction, and/or multiplication with decimals with and without regrouping.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.2.1.2</b> Solve problems involving addition and subtraction of fractions (through 16ths – like and unlike denominators – for unlike denominators, the LCD must be one of the given denominators).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	<p>Textbook resources</p> <p>Web sites</p> <p>Notebook</p> <p>Supplemental materials (PSSA Pointers Sheet, Rubric in advance)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.2.5.G</b> Apply estimation strategies to a variety of problems including time and money.	Teacher will guide students to:  <b>M5.A.3.1.2</b> Use estimation to solve problems involving whole numbers and/or decimals (up to 2-digit multipliers, single-digit divisors or multiples of 10; whole numbers through thousands and decimals through hundredths).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)
<b>PA Standard 2.2.5.H</b> Explain multiplication and division algorithms.	Teacher will guide students to:  <b>M5.A.2.1.1</b> Solve problems involving addition, subtraction, multiplication and division of whole numbers (multipliers up to 2 digits – divisors one digit) and decimals including money (answer through hundredths – no divisors with decimals).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.2.5.I</b> Select a method for computation and explain why it is appropriate.	Teacher will guide students to: <b>M5.A.2.1.3</b> Choose the correct operation(s) to solve a problem (no more than 2 operations).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources Web sites Notebook Supplemental materials (PSSA Pointers Sheet, Rubric in advance)
<b>PA Standard 2.5.5.F</b> Use appropriate problem-solving strategies (e.g., solving a simpler problem, drawing a picture or diagram)	Teacher will guide students to: <b>M5.A.2.1.3</b> Choose the correct operation(s) to solve a problem (no more than 2 operations).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources Web sites Notebook Supplemental materials (PSSA Pointers Sheet, Rubric in advance)
<b>PA Standard 2.5.5.A</b> Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, check whether an answer makes sense and explain how the problem was solved.	Teacher will guide students to: Solve problems involving all operations of whole numbers and decimals and clearly explain the solution.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources Web sites Notebook Supplemental materials (PSSA Pointers Sheet, Rubric in advance)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.5.5.B</b> Use appropriate mathematical terms, vocabulary, language symbols and graphs to explain clearly and logically solutions to problems.	Teacher will guide students to:  Solve problems involving all operations of whole numbers and decimals and clearly explain the solution.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)
<b>PA Standard 2.5.5.D</b> Connect, extend and generalize problem solutions to other concepts, problems and circumstances in mathematics.	Teacher will guide students to:  Solve problems involving all operations of whole numbers and decimals and clearly explain the solution.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)
<b>PA Standard 2.5.5.E</b> Select, use and justify the methods, materials and strategies used to solve problems.	Teacher will guide students to:  Solve problems involving all operations of whole numbers and decimals and clearly explain the solution.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 2:** Problem-Solving

**MAJOR OBJECTIVE:** Develop a plan, choose the correct operation to solve a problem, and explain work and reasoning.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.4.5.D</b> Distinguish between relevant and irrelevant information in a mathematical problem.	Teacher will guide students to:  <b>M5.A.2.1.3</b> Choose the correct operation(s) to solve a problem (no more than 2 operations).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Open-ended responses throughout the entire school year</li></ul>	Textbook resources  Web sites  Notebook  Supplemental materials (PSSA Pointers Sheet, Rubric in advance)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 3:** Numbers and Operations

**MAJOR OBJECTIVE:** Define, list, and identify primes, composites, factors, multiples, and negatives. Add, subtract, multiply, divide, and estimate numbers from millions through hundredths.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.1.5.B:</b> Apply number theory concepts to rename a number quantity (e.g., six, 6, <math>\frac{12}{2}</math>, <math>3 \times 2</math>, <math>10 - 4</math>).</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.5.1</b> Use or develop regions and/or sets (e.g., circle graph, base ten blocks) to model fractions and mixed numbers through hundredths (may include reducing the fractions).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials</p>
<p><b>PA Standard 2.1.5.E</b> Explain the concepts of prime and composite numbers.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.6.1</b> Define/list/identify prime and composite numbers less than or equal to 100.</p> <p><b>M5.A.1.6.2</b> Define/list/identify factors and/or multiples of a given whole number less than or equal to 50.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (100's chart)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 3:** Numbers and Operations

**MAJOR OBJECTIVE:** Define, list, and identify primes, composites, factors, multiples, and negatives. Add, subtract, multiply, divide, and estimate numbers from millions through hundredths.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.1.5.F</b> Use simple concepts of negative numbers (e.g., on a number line, in counting, in temperature).</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.4.1</b> Locate/Identify integers on a number line (greater than or equal to -20).</p> <p><b>M5.A.1.4.2</b> Identify negative temperatures on a thermometer (through -20°C or °F).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (number line, thermometer)</p>
<p><b>PA Standard 2.1.5.G</b> Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.6.1</b> Define/list/identify prime and composite numbers less than or equal to 100.</p> <p><b>M5.A.1.6.2</b> Define/list/identify factors and/or multiples of a given whole number less than or equal to 50.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (100's chart, multiplication chart)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 4:** Fractions

**MAJOR OBJECTIVE:** Model, identify, compare, order, add and subtract fractions and mixed numbers with like and unlike denominators.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.1.5.D</b> Use models to represent fractions and decimals.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.1.5.1</b> Use or develop regions and/or sets (e.g., circle graph, base ten blocks) to model fractions and mixed numbers through hundredths (may include reducing the fractions).</p> <p><b>M5.A.1.3.3</b> Compare proper fractions through 16ths with like and unlike denominators.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (fraction strips, circles, and pictures)</p>
<p><b>PA Standard 2.2.5.F</b> Demonstrate skills for using fraction calculators to verify conjectures confirm computations and explore complex problem-solving situations.</p>	<p>Teacher will guide students to:</p> <p><b>M5.A.2.1.2</b> Solve problems involving addition and subtraction of fractions (through 16ths – like and unlike denominators – for unlike denominators, the LCD must be one of the given denominators).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (calculator)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.9.5.A</b> Give formal definitions of geometric figures.	Teacher will guide students to:  <b>M5.C.1.1.2</b> Identify and/or describe properties of all types of quadrilaterals (parallelogram, rectangle, rhombus, square, trapezoid).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Definition chart, geo-solids)
<b>PA Standard 2.9.5.B</b> Classify and compare triangles and quadrilaterals according to sides or angles.	Teacher will guide students to:  Classify, compare and contrast triangles and quadrilaterals according to sides or angles, including: right triangle, obtuse triangle, acute triangle, scalene triangle, equilateral triangle, square, rectangles, rhombus, parallelogram, trapezoid.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Definition chart, models of triangles and quadrilaterals)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.9.5.C</b> Identify and measure circles, their diameters and their radii.</p>	<p>Teacher will guide students to:</p> <p>Utilize manipulatives to identify the parts of a circle (chord, radius, diameter, and circumference) and measure the diameter, radius, and circumference.</p> <p>Use data to prove the formulas: <math>C = 2\pi r</math> and <math>C = \pi d</math></p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, coffee filters, string, formula cards)</p>
<p><b>PA Standard 2.9.5.D</b> Describe in words how geometric shapes are constructed.</p>	<p>Teacher will guide students to:</p> <p><b>M5.C.1.1.1</b> Identify, and/or classify cubes, rectangular prisms or pyramids using faces, vertices and edges.</p> <p><b>M5.C.1.1.2</b> Identify and/or describe properties of all types of quadrilaterals (parallelogram, rectangle, rhombus, square, trapezoid).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, geo-solids)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.9.5.E</b> Construct two- and three-dimensional shapes and figures using manipulatives, geoboards and computer software.</p>	<p>Teacher will guide students to:</p> <p><b>M5.C.1.1.1</b> Identify, and/or classify cubes, rectangular prisms or pyramids using faces, vertices and edges.</p> <p><b>M5.C.1.1.2</b> Identify and/or describe properties of all types of quadrilaterals (parallelogram, rectangle, rhombus, square, trapezoid).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, geo-solids)</p>
<p><b>PA Standard 2.9.5.F</b> Find familiar solids in the environment and describe them.</p>	<p>Teacher will guide students to:</p> <p><b>M5.C.1.1.1</b> Identify, and/or classify cubes, rectangular prisms or pyramids using faces, vertices and edges.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, geo-solids)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.9.5.G</b> Create an original tessellation.	Teacher will guide students to:  <b>M5.C.2.1.1</b> Draw or identify a translation (slide), reflection (flip) or rotation (turn) of a 2-dimensional shape.  <b>M5.D.1.1.1</b> Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or ÷ of whole numbers). Pattern must show 3 repetitions.  <b>M5.D.1.1.2</b> Create or replicate a numerical or geometric pattern showing 3 repetitions of that pattern (+, -, x or ÷ of whole numbers may be used).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Tessellation patterns, crayons, markers)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.9.5.I</b> Represent and use the concepts of line, point and plane.</p>	<p>Teacher will guide students to:</p> <p><b>M5.C.1.2.1</b> Identify, draw and/or label points, lines, line segments and rays.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, straws)</p>
<p><b>PA Standard 2.9.5.J</b></p> <p>Define the basic properties of squares, pyramids, parallelograms, quadrilaterals, trapezoids, polygons, rectangles, rhombi, circles, triangles, cubes, prisms, spheres and cylinders.</p>	<p>Teacher will guide students to:</p> <p><b>M5.C.1.1.1</b> Identify, and/or classify cubes, rectangular prisms or pyramids using faces, vertices and edges.</p> <p><b>M5.C.1.1.2</b> Identify and/or describe properties of all types of quadrilaterals (parallelogram, rectangle, rhombus, square, trapezoid).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Definition chart, geo-solids)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.9.5.K</b> Analyze simple transformations of geometric figures and rotations of line segments.	Teacher will guide students to:  <b>M5.C.2.1.1</b> Draw or identify a translation (slide), reflection (flip) or rotation (turn) of a 2-dimensional shape.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Definition chart, Tangram shapes, Pentomino shapes)
<b>PA Standard 2.9.5.L</b> Identify properties of geometric figures (e.g., parallel, perpendicular, similar, congruent, symmetrical).	Teacher will guide students to:  <b>M5.C.2.1.2</b> Identify the number of lines of symmetry and/or draw all lines of symmetry in a two-dimensional polygon.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Definition chart)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 5:** Geometry

**MAJOR OBJECTIVE:** Identify, classify, draw, and describe 2- and 3-dimensional geometric shapes, transformations, and lines of symmetry

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.10.5.A</b> Identify and compare parts of right triangles, including right angles, acute angles, hypotenuses and legs	Teacher will guide students to:  Draw and model various angles, including right, acute, obtuse, and straight using a variety of manipulatives.  Utilize manipulatives to create right triangles and differentiate between hypotenuse and legs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Definition chart, geoboards, rubberbands)
<b>PA Standard 2.10.5.B</b> Create right triangles on a geoboard.	Teacher will guide students to:  Utilize manipulatives to create right triangles and differentiate between hypotenuse and legs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Geoboards, rubberbands)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 6:** Algebraic Concepts

**MAJOR OBJECTIVE:** Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.8.5.A</b> Recognize, reproduce, extend, create and describe patterns, sequences and relationships verbally, numerically, symbolically and graphically, using a variety of materials.</p>	<p>Teacher will guide students to:</p> <p><b>M5.D.1.1.1</b> Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or ÷ of whole numbers). Pattern must show 3 repetitions.</p> <p><b>M5.D.1.1.2</b> Create or replicate a numerical or geometric pattern showing 3 repetitions of that pattern (+, -, x or ÷ of whole numbers may be used).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Shape manipulatives)</p>
<p><b>PA Standard 2.8.5.B</b> Connect patterns to geometric relations and basic number skills.</p>	<p>Teacher will guide students to:</p> <p><b>M5.D.1.1.1</b> Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or ÷ of whole numbers). Pattern must show 3 repetitions.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Supplemental materials (Shape manipulatives)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 6:** Algebraic Concepts

**MAJOR OBJECTIVE:** Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.8.5.C</b> Form rules based on patterns (e.g., an equation that relates pairs in a sequence).	Teacher will guide students to:  <b>M5.D.1.2.1</b> Form a rule based on a given pattern, or illustrate a pattern based on a given rule (+, -, x or ÷ of whole numbers may be used). Patterns must show 3 repetitions.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook
<b>PA Standard 2.8.5.D</b> Use concrete objects and combinations of symbols and numbers to create expressions that model mathematical situations.	Teacher will guide students to:  <b>M5.D.1.1.1</b> Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or ÷ of whole numbers). Pattern must show 3 repetitions.  <b>M5.D.1.1.2</b> Create or replicate a numerical or geometric pattern showing 3 repetitions of that pattern (+, -, x or ÷ of whole numbers may be used).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Shape manipulatives)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 6:** Algebraic Concepts

**MAJOR OBJECTIVE:** Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.8.5.E</b> Explain the use of combinations of symbols and numbers in expressions, equations and inequalities.	Teacher will guide students to:  <b>M5.D.2.1.1</b> Solve for a missing number (blank, question mark, variable) in an equation involving a single operation whole numbers only.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook
<b>PA Standard 2.8.5.F</b> Describe a realistic situation using information given in equations, inequalities, tables or graphs.	Teacher will guide students to:  <b>M5.D.2.1.2</b> Match a realistic situation to an equation, expression, inequality (<, >, =), table or graph (variable must be isolated, e.g., $17 + 39 = n$ ).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 6:** Algebraic Concepts

**MAJOR OBJECTIVE:** Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.8.5.G</b> Select and use appropriate strategies, including concrete materials, to solve number sentences and explain the method of solution.	Teacher will guide students to:  <b>M5.D.2.1.1</b> Solve for a missing number (blank, question mark, variable) in an equation involving a single operation whole numbers only.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Shape manipulatives)
<b>PA Standard 2.8.5.H</b> Locate and identify points on a coordinate system.	Teacher will guide students to:  Match or plot the ordered pair with the appropriate point (or object) on a simple grid.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Coordinate plane, Battleship)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 6:** Algebraic Concepts

**MAJOR OBJECTIVE:** Extend, create, identify and form rules for patterns. Solve for missing numbers in an equation.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.8.5.I</b> Generate functions from tables of data and relate data to corresponding graphs and functions.	Teacher will guide students to:  <b>M5.D.2.1.2</b> Match a realistic situation to an equation, expression, inequality (<, >, =), table or graph (variable must be isolated, e.g., $17 + 39 = n$ ).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Journal or notebook  Supplemental materials (Sample data)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.6.5.A</b> Organize and display data using pictures, tallies, tables, charts, bar graphs and circle graphs.</p>	<p>Teacher will guide students to:</p> <p><b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.</p> <p>A grid will be provided to display data on bar graphs or line graphs.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (Sample data)</p>
<p><b>PA Standard 2.6.5.B</b> Describe data sets using mean, median, mode and range.</p>	<p>Teacher will guide students to:</p> <p><b>M5.E.2.1.1</b> Determine the mean/average (answer is a whole number), median (answer is a whole number or average of 2 numbers) and range of data (up to 10 numbers).</p> <p><b>M5.E.2.1.2</b> Identify the mode in a set of data (up to 10 numbers).</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (Sample data)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.11.5C</b> Identify maximum and minimum.	Teacher will guide students to:  <b>M5.E.2.1.1</b> Determine the mean/average (answer is a whole number), median (answer is a whole number or average of 2 numbers) and range of data (up to 10 numbers).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)
<b>PA Standard 2.5.5C</b> Show ideas in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams and models.	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.4.5F</b> Use statistics to quantify issues (e.g., in social studies, in science).	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)
<b>PA Standard 2.11.5B</b> Identify least and greatest values represented in bar and circle graphs.	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 2.4.5E</b> Interpret statements made with precise language of logic (e.g., “all”, “or”, “every”, “none”, “some”, “or”, “many”).</p>	<p>Teacher will guide students to:</p> <p><b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.</p> <p>A grid will be provided to display data on bar graphs or line graphs.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (Sample data)</p>
<p><b>PA Standard 2.4.5C</b> Draw inductive and deductive conclusions within mathematical contexts.</p>	<p>Teacher will guide students to:</p> <p><b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.</p> <p>A grid will be provided to display data on bar graphs or line graphs.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> <li>• Student performance</li> <li>• Individuals during whole group discussion</li> <li>• Individuals during small group work</li> <li>• Individuals during small group activity</li> <li>• Teacher observation</li> <li>• Independent activities</li> <li>• Teacher created assessment</li> </ul>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials (Sample data)</p>

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.4.5B</b> Use models, number facts, properties and relationships to check and verify predictions and explain reasoning.	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)
<b>PA Standard 2.11.5D</b> Describe the relationship between rates of change and time.	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 7:** Data Analysis

**MAJOR OBJECTIVE:** Display and interpret data using charts, tables, bar graphs, lines graphs, and pictographs. Calculate measures of central tendency (mean, median, and mode) and range.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.6.5.C</b> Sort data using Venn diagrams	Teacher will guide students to:  Utilize Venn diagrams to sort data.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Graphic organizer)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.9.5.H</b> Describe the relationship between the perimeter and area of triangles, quadrilaterals and circles.	Teacher will guide students to:  <b>M5.B.1.3.1</b> Estimate which polygon (shown on a grid) has a greater perimeter or area (compare either area to area or perimeter to perimeter).  <b>M5.B.2.2.1</b> Find the perimeter of a figure drawn and labeled (with the same units throughout).  <b>M5.B.2.2.2</b> Find the area of a square or rectangle (with the same units throughout - whole numbers only).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Graph paper)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.3.5.A</b> Select and use appropriate instruments and units for measuring quantities (e.g., perimeter, volume, area, weight, time, temperature).	Teacher will guide students to:  <b>M5.B.1.1.1</b> Select the appropriate unit for measuring weight (mass), capacity, length, perimeter and area.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Graph paper, rulers, scales, thermometers, clocks)
<b>PA Standard 2.3.5.B</b> Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter and area.	Teacher will guide students to:  <b>M5.B.2.1.1</b> Use a ruler to measure to the nearest 1/8 inch or centimeter.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Graph paper, rulers, scales, thermometers, clocks)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.3.5.C</b> Estimate, refine and verify specified measurements of objects.	Teacher will guide students to:  <b>M5.B.1.3.1</b> Estimate which polygon (shown on a grid) has a greater perimeter or area (compare either area to area or perimeter to perimeter).  <b>M5.B.1.3.2</b> Estimate the area of an irregular figure shown on a grid.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Graph paper, rulers, scales, thermometers, clocks)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.3.5.D</b> Convert linear measurements within the same system.	Teacher will guide students to:  <b>M5.B.1.2.1</b> Convert using linear measurements, capacity, and weight (mass) within the same system to the unit immediately above or below the given unit (using only the units below – use a conversion chart or a “hint” with problems e.g., hint: 16oz = 1lb). <ul style="list-style-type: none"><li>• Metric using mm, cm, m and km; mL and L; g and kg</li><li>• Customary using cup, pint, quart, gallon; in, ft, yd; oz, lb</li></ul>	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.3.5.E</b> Add and subtract measurements.	Teacher will guide students to:  <b>M5.B.1.2.2</b> Add or subtract linear measurements, (feet and inches) or units of time (hours and minutes), without having to regroup with subtraction (answer should be in simplest form).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook
<b>PA Standard 2.11.5.E</b> Estimate areas and volumes as the sums of areas of tiles and volumes of cubes.	Teacher will guide students to:  <b>M5.B.1.3.1</b> Estimate which polygon (shown on a grid) has a greater perimeter or area (compare either area to area or perimeter to perimeter).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 8:** Measurement

**MAJOR OBJECTIVE:** Select appropriate units, converts, add, subtract, estimate, and measure units of length, capacity, weight, time and temperature. Find perimeter and area of regular and irregular shapes.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.11.5.F</b> Describe the relationship between the size of the unit of measurement and the estimate of the areas and volumes.	Teacher will guide students to:  <b>M5.B.1.3.1</b> Estimate which polygon (shown on a grid) has a greater perimeter or area (compare either area to area or perimeter to perimeter).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.6.5.D</b> Predict the likely number of times a condition will occur based on analyzed data.	Teacher will guide students to:  Make a predictions based on data.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.6.5.E</b> Construct and defend simple conclusions based on data.	Teacher will guide students to:  <b>M5.E.1.1.1</b> Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, line graphs and using a title, appropriate scale, and labels.  A grid will be provided to display data on bar graphs or line graphs.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Sample data)
<b>PA Standard 2.7.5.A</b> Perform simulations with concrete devices (e.g., dice, spinner) to predict the chance of an event occurring.	Teacher will guide students to:  <b>M5.E.3.1.1</b> Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (information could be represented by pictographs, bar graphs, charts, tables and/or spinners).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.7.5.B</b> Determine the fairness of the design of a spinner.	Teacher will guide students to:  <b>M5.E.3.1.2</b> Determine the probability of an outcome (e.g., a coin toss, a roll of a number cube) and express as a fraction without reduction.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners)
<b>PA Standard 2.7.5.C</b> Express probabilities as fractions and decimals.	Teacher will guide students to:  <b>M5.E.3.1.2</b> Determine the probability of an outcome (e.g., a coin toss, a roll of a number cube) and express as a fraction without reduction.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.7.5.D</b> Compare predictions based on theoretical probability and experimental results.	Teacher will guide students to:  <b>M5.E.3.1.1</b> Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (information could be represented by pictographs, bar graphs, charts, tables and/or spinners).  <b>M5.E.3.1.2</b> Determine the probability of an outcome (e.g., a coin toss, a roll of a number cube) and express as a fraction without reduction.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)
<b>PA Standard 2.7.5.E</b> Calculate the probability of a simple event.	Teacher will guide students to:  <b>M5.E.3.1.2</b> Determine the probability of an outcome (e.g., a coin toss, a roll of a number cube) and express as a fraction without reduction.	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.7.5.F</b> Determine patterns generated as a result of an experiment.	Teacher will guide students to:  <b>M5.D.1.2.1</b> Form a rule based on a given pattern, or illustrate a pattern based on a given rule (+, -, x or ÷ of whole numbers may be used). Patterns must show 3 repetitions.	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)
<b>PA Standard 2.7.5.G</b> Determine the probability of an event involving “and”, “or” or “not”.	Teacher will guide students to:  <b>M5.E.3.1.1</b> Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (information could be represented by pictographs, bar graphs, charts, tables and/or spinners).	Teacher evaluation of:  <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.7.5.H</b> Predict and determine why some outcomes are certain, more likely, less likely, equally likely or impossible.	Teacher will guide students to:  <b>M5.E.3.1.1</b> Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (information could be represented by pictographs, bar graphs, charts, tables and/or spinners).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook
<b>PA Standard 2.7.5.I</b> Find all possible combinations and arrangements involving a limited number of variables.	Teacher will guide students to:  Determine/show all possible combinations involving no more than 20 total arrangements (e.g., tree diagram, table, grid).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)

**CONTENT:** Grade 5 Math

**CORE CONCEPT 9:** Probability

**MAJOR OBJECTIVE:** Predict and determine the probability of specific outcomes for simple events.

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<b>PA Standard 2.7.5.J</b> Develop a tree diagram and list the elements.	Teacher will guide students to:  Determine/show all possible combinations involving no more than 20 total arrangements (e.g., tree diagram, table, grid).	Teacher evaluation of: <ul style="list-style-type: none"><li>• Student performance</li><li>• Individuals during whole group discussion</li><li>• Individuals during small group work</li><li>• Individuals during small group activity</li><li>• Teacher observation</li><li>• Independent activities</li><li>• Teacher created assessment</li></ul>	Textbook resources  Computer programs/web sites  Notebook  Supplemental materials (Spinners, Dice, Coins, Marbles, Colored counters)

**V. EXPECTED LEVELS OF ACHIEVEMENT**

A. Students are expected to reach the proficient level of achievement in all core concept areas noted in the specific content area of this curriculum.

B. Grading system this course is as follows:

<b>Grading Scale</b>	
A	100%-90%
B	89%-80%
C	79%-70%
D	69%-60%
F	Below 60%

C. A student's grade will be determined at the conclusion of each marking period. Progress reports will be sent home at the mid-point of each marking period for those students achieving below 70%.