

Pine Grove Area

SCHOOL DISTRICT

Mathematics

Grade Three

August 20, 2009

I. PHILOSOPHY

The Third Grade Math course of the Pine Grove Area School District has been structured to introduce, systematically and thematically, the eleven Mathematics Standards: Numbers, Number Systems, and Number Relationships; Computation and Estimation; Measurement and Estimation; Mathematical Reasoning and Connections; Mathematical Problem Solving and Communication; Statistics and Data Analysis; Probability and Predictions; Algebra and Functions; Geometry; Trigonometry; and Concepts of Calculus. The Third Grade Math course begins the process at the third grade level. 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 and Order numbers to the hundred thousands place. Apply place Value to counting money.
2. Addition/Subtraction of Whole Numbers: Use computation and estimation skills to solve addition and subtraction problems.
3. Time/Data/Graphing: Demonstrate telling time to the nearest minute and calculating elapsed time; demonstrate ways to organize and interpret data that includes reading and constructing tally charts, line plots and bar graphs, line graphs, and pictographs.
4. Multiplication: Develop multiplication concepts and strategies for learning basic multiplication facts and introduce properties of multiplication.
5. Division: Develop division concepts and strategies for learning basic division facts and introduce properties of division.
6. Geometry: Identify plane and solid figures and analyze their characteristics.
7. Measurement: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.
8. Fractions: Identify fractions and mixed numbers, equivalent fractions, and to compare and order fractions.
9. Algebra/Calculus: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.
10. Probability: Investigate chance to determine the likelihood of an event and list the possible results of an event to determine the difference between the predicted and actual outcomes.

III. COURSE OF STUDY

- A. Course Name: Third Grade Math
- B. Grade Level: Grade Three
- C. Length of Course: full year
- D. Academic Level: Third Grade
- E. Credits: None
- F. Prerequisites: None
- G. Course Description:

The third grade math curriculum will build upon previously learned concepts and ideas and expose students to concepts of mathematics in the ten core areas. Emphasis will be placed on meeting each student's academic needs, learning styles and readiness. Accommodations and modifications will be made for those students who need additional assistance and/or remediation in specific areas.

IV. CONTENT: Grade Three Math
CORE CONCEPT 1: Place Value

MAJOR OBJECTIVE: Read, Write, Compare and Order numbers to the hundred thousands place. Apply place Value to counting money.

CURRICULUM STANDARD:			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.1.3.A. Count using whole numbers (to 10,000) and by 2's, 3's, 5's, 10's, 25's and 100's.</p>	<p>Teacher will guide students to:</p> <p>Apply one-to-one correspondence and number patterns to count up and count back and to compare values of whole numbers.</p> <ul style="list-style-type: none"> - oral counting forward and backward - order number cards - demonstrate number patterns by skip counting 	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Oral question and answer Independent activities Student tests/quizzes</p>	<ul style="list-style-type: none"> • Textbook resources • Technology resources • Journal or notebook • Supplemental materials • Number cards • Dry Erase boards • Chalkboard
<p>PA Standard 2.1.3.C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols.</p>	<p>Teacher will guide students to:</p> <p>M3.A.1.1.1 Match the word name with the appropriate whole number (up through 9,999).</p> <p>M3.A.1.1.2 Differentiate between and/or give examples of even and odd number (limit to three digits.)</p> <p>M3.A.1.1.3 Compare two whole numbers using greater than (>), less than (<), or equal to (=) up through 9,999.</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Oral question and answer Independent activities Student tests/quizzes</p>	<ul style="list-style-type: none"> • Textbook resources • Technology resources • Journal or notebook • Supplemental materials • Number cards • Word cards • White boards • Chalkboard • Place-value blocks • Hundred chart

CONTENT: Grade Three Math

CORE CONCEPT 1: Place Value

MAJOR OBJECTIVE: Read, Write, Compare and Order numbers to the hundred thousands place. Apply place Value to counting money.

CURRICULUM STANDARD:			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.1.3.I. Apply place-value concepts and numeration to counting, ordering and grouping.</p>	<p>Teacher will guide students to: M3.A.1.1.5 Match a symbolic representation of numbers to appropriate whole numbers M3.A.1.1.4 Order a set of whole numbers from least to greatest or greatest to least (up through 9,999; limit sets to no more than four numbers)</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Number cards Word cards White boards Chalkboard Place-value blocks Hundred chart</p>
<p>PA Standard 2.1.3.J. Estimate, approximate, round or use exact numbers as appropriate.</p>	<p>Teacher will guide students to: Round two-digit numbers to the nearest 10 and three digit numbers to the nearest 100.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during w whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Number cards Word cards White boards Chalkboard Place-value blocks Hundred chart</p>

CONTENT: Grade Three Math

CORE CONCEPT 1: Place Value

MAJOR OBJECTIVE: Read, Write, Compare and Order numbers to the hundred thousands place. Apply place Value to counting money.

CURRICULUM STANDARD:			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.1.3.E Count, compare and make change using a collection of coins and one-dollar bills.	Teacher will guide students to: M3.A.1.3.1 Count a collection of bills and coins less than \$5.00. Money may be represented as 15 cents, 15¢ or \$0.15. M3.A.1.3.2 Compare total values of combinations of coins less than \$5.00. M3.A.1.3.3 Make change for an amount up to \$5.00 with no more than \$2.00 change given.	Teacher evaluation of: Student performance Partner projects Individuals during w whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Chalkboard Money Quizmo Play Money Magnetic Money Money Stamps

CONTENT: Grade Three Math

CORE CONCEPT 2: Addition/Subtraction of Whole Numbers

MAJOR OBJECTIVE: Use computation and estimation skills to solve addition and subtraction problems.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.2.3.B. Solve single- and double-digit addition and subtraction problems with regrouping in vertical form.</p>	<p>Teacher will guide students to: M3.A.3.1.1 Solve single-and double- digit addition and subtraction problems with and without regrouping in vertical or horizontal form. M3.A.3.1.3 Solve triple digit addition and subtraction problems without regrouping in vertical or horizontal form. M3.A.2.1.3 Identify the correct operation to solve a word problem.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Place-value blocks Chalkboard Dry Erase Boards</p>
<p>PA Standard 2.2.3.E. Use estimation skills to arrive at conclusions.</p>	<p>Teacher will guide students to: M3.A.3.2.1 Estimate sums and differences of quantities; round two-digit numbers to the nearest 10 and three digit numbers to the nearest 100.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Place-value blocks Chalkboard Dry Erase Boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 2: Addition/Subtraction of Whole Numbers

MAJOR OBJECTIVE: Use computation and estimation skills to solve addition and subtraction problems.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.1.3.K. Describe the inverse relationship between addition and subtraction.</p>	<p>Teacher will guide students to: M3.A.2.1.2 Demonstrate the inverse relationship between addition and subtraction using fact families.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Place-value blocks Chalkboard Dry Erase Boards</p>
<p>PA Standard 2.3.3.G Explain addition and subtraction algorithms with regrouping.</p>	<p>Teacher will guide students to: Demonstrate the inverse relationship between addition and subtraction algorithms by illustrating how to regroup a two- or three- digit number in preparation for subtraction.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Place-value blocks Chalkboard Dry Erase Boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 2: Addition/Subtraction of Whole Numbers

MAJOR OBJECTIVE: Use computation and estimation skills to solve addition and subtraction problems.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.5.3.A. Use appropriate problem-solving strategies (e.g. guess and check, working backwards).</p>	<p>Teacher will guide students to:</p> <p>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 in grade appropriate context.</p> <p>Use appropriate mathematical vocabulary when explaining how to solve a problem.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Counters</p> <p>Chalkboard</p> <p>Dry Erase Boards</p>
<p>PA Standard 2.5.3.C. Select and use an appropriate method, materials and strategy to solve problems, including mental mathematics, paper and pencil and concrete objects.</p>	<p>Teacher will guide students to:</p> <p>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 in grade appropriate context.</p> <p>Use appropriate mathematical vocabulary when explaining how to solve a problem.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Counters</p> <p>Chalkboard</p> <p>Dry Erase Boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 2: Addition/Subtraction of Whole Numbers

MAJOR OBJECTIVE: Use computation and estimation skills to solve addition and subtraction problems.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.5.3.B. Determine when sufficient information is present to solve a problem and explain how to solve a problem.</p>	<p>Teacher will guide students to:</p> <p>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 in grade appropriate context.</p> <p>Use appropriate mathematical vocabulary when explaining how to solve a problem.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Counters</p> <p>Chalkboard</p> <p>Dry Erase Boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 3: Time/Data/Graphing

MAJOR OBJECTIVE: Demonstrate telling time to the nearest minute and calculating elapsed time; demonstrate ways to organize and interpret data that includes reading and constructing tally charts, line plots and bar graphs, line graphs, and pictographs.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.2.3.D. Tell time (analog and digital) to the minute.</p>	<p>Teacher will guide students to: M3.B.1.1.1 Tell/show time (analog) to the minute. M3.B.1.1.3 Identify times of the day and night as AM and PM.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Time Quizmo Flashcards Play clocks</p>
<p>PA Standard 2.3.3.C. Determine and compare elapsed times.</p>	<p>Teacher will guide students to: M3.B.1.1.2 Find elapsed time to increments of 5 minutes (limited to 2 adjacent hours).</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials B.E.E. on Time game Race Around the Clock game Elapsed time rulers Flashcards Play clocks</p>

CONTENT: Grade Three Math

CORE CONCEPT 3: Time/Data/Graphing

MAJOR OBJECTIVE: Demonstrate telling time to the nearest minute and calculating elapsed time; demonstrate ways to organize and interpret data that includes reading and constructing tally charts, line plots and bar graphs, line graphs, and pictographs.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.6.3.A. Gather, organize and display data using pictures, tallies, charts, bar graphs and pictographs.</p>	<p>Teacher will guide students to: M3.E.1.1.1 Analyze data shown on tables, charts, or bar graphs using the concepts of largest, smallest, most often, least often and middle. M3.E.1.2.1 Graph data or complete a graph given the data (grid is provided). M3.E.1.2.2 Translate information from one type of display to another (e.g. convert tally chart to bar graph.) Limit to tally charts, bar graphs, and tables.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Dry erase boards</p>
<p>PA Standard 2.6.3.B. Formulate and answer questions based on data shown on graphs.</p>	<p>Teacher will guide students to: M3.E.1.1.2 Describe, interpret and/or answer questions based on data shown in tables, charts or bar graphs.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Dry erase boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 3: Time/Data/Graphing

MAJOR OBJECTIVE: Demonstrate telling time to the nearest minute and calculating elapsed time; demonstrate ways to organize and interpret data that includes reading and constructing tally charts, line plots and bar graphs, line graphs, and pictographs.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.6.3.D. Form and justify an opinion on whether a given statement is reasonable based on a comparison to data.</p>	<p>Teacher will guide students to: M3.E.1.1.2 Describe, interpret and/or answer questions based on data shown in tables, charts or bar graphs.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Dry erase boards</p>
<p>PA Standard 2.6.3.C Predict the likely number of times a condition will occur based on analyzed data.</p>	<p>Teacher will guide students to: M3.E.1.1.2 Describe, interpret and/or answer questions based on data shown in tables, charts or bar graphs.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Dry erase boards</p>

CONTENT: Grade Three Math

CORE CONCEPT 4: Multiplication

MAJOR OBJECTIVE: Develop multiplication concepts and strategies for learning basic multiplication facts and introduce properties of multiplication.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.2.3.C. Demonstrate the concept of multiplication as repeated addition and arrays.	Teacher will guide students to: M3.A.2.1.1 Represent multiplication as repeated addition.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Flash cards Games Multiplication Facts Table Counters Dry erase boards Chalkboard

CONTENT: Grade Three Math

CORE CONCEPT 4: Multiplication

MAJOR OBJECTIVE: Develop multiplication concepts and strategies for learning basic multiplication facts and introduce properties of multiplication.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.5.3.A. Use appropriate problem-solving strategies (e.g. guess and check, working backwards).</p>	<p>Teacher will guide students to: M3.A.3.1.2 Solve problems involving multiplication through the 9's tables through 9×5.</p> <p>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 in grade appropriate context.</p> <p>Use appropriate mathematical vocabulary when explaining how to solve a problem.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Flash cards</p> <p>Games</p> <p>Multiplication Facts Table</p> <p>Counters</p> <p>Dry erase boards</p> <p>Chalkboard</p>

CONTENT: Grade Three Math

CORE CONCEPT 4: Multiplication

MAJOR OBJECTIVE: Develop multiplication concepts and strategies for learning basic multiplication facts and introduce properties of multiplication.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.5.3.C. Select and use an appropriate method, materials and strategy to solve problems, including mental mathematics, paper and pencil and concrete objects.</p>	<p>Teacher will guide students to: M3.A.3.1.2 Solve problems involving multiplication through the 9's tables through 9×5.</p> <p>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 in grade appropriate context.</p> <p>Use appropriate mathematical vocabulary when explaining how to solve a problem.</p>	<p>Teacher evaluation of: Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Flash cards Games Multiplication Facts Table Counters Dry erase boards Chalkboard</p>

CONTENT: Grade Three Math

CORE CONCEPT 4: Multiplication

MAJOR OBJECTIVE: Develop multiplication concepts and strategies for learning basic multiplication facts and introduce properties of multiplication.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.5.3.B. Determine when sufficient information is present to solve a problem and explain how to solve a problem.	Teacher will guide students to: 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 in grade appropriate context. Use appropriate mathematical vocabulary when explaining how to solve a problem.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Counters Chalkboard Dry Erase Boards

CONTENT: Grade Three Math

CORE CONCEPT 5: Division

MAJOR OBJECTIVE: Develop division concepts and strategies for learning basic division facts and introduce properties of division.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.2.3.D Demonstrate the concept of division as repeated subtraction and as sharing.	Teacher will guide students to: Solve problems involving division facts through the 9's tables.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Flash cards Games Multiplication Facts Table Counters Dry erase boards Chalkboard

CONTENT: Grade Three Math

CORE CONCEPT 6: Geometry

MAJOR OBJECTIVE: Analyze the characteristics of plane and solid figures.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.9.3.C. Draw two-and three- dimensional geometric shapes and construct rectangles, squares and triangles on the geoboard and on graph paper satisfying specific criteria.</p>	<p>Teacher will guide students to:</p> <p>M3.C.1.1.1 Name/identify/describe geometric shapes in two dimensions (circle, square, rectangle, triangle, pentagon, hexagon, octagon).</p> <p>M3.C.1.1.2 Name/identify geometric shapes in three dimensions (sphere, cube, cylinder, cone, pyramid, rectangular prism).</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/ quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Geoboards/rubberbands Grid paper</p>
<p>PA Standard 2.9.3.E. Identify and draw lines of symmetry in geometric figures.</p>	<p>Teacher will guide students to:</p> <p>M3.C.2.1.1 Identify/draw one line of symmetry in a two-dimensional figure.</p> <p>M3.C.2.1.2 Identify symmetrical two-dimensional shapes.</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Geoboards/rubberbands Grid paper</p>

CONTENT: Grade Three Math

CORE CONCEPT 6: Geometry

MAJOR OBJECTIVE: Analyze the characteristics of plane and solid figures.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.9.3.F. Identify symmetry in nature</p>	<p>Teacher will guide students to:</p> <p>M3.C.2.1.2 Identify symmetrical two-dimensional shapes.</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Geoboards/rubberbands Grid paper</p>
<p>PA Standard 2.9.3.H Show relationships between and among figures using reflections.</p>	<p>Teacher will guide students to:</p> <p>Identify congruent figures and determine if a congruent figure has been transformed by slide, flip, or turn.</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Geoboards/rubberbands Grid paper Power shapes</p>

CONTENT: Grade Three Math

CORE CONCEPT 6: Geometry

MAJOR OBJECTIVE: Analyze the characteristics of plane and solid figures.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.9.3.I Predict how shapes can be changed by combining and dividing them.</p>	<p>Teacher will guide students to:</p> <p>Create and identify shapes by combining 2 or more shapes or dividing a shape into 2 or more smaller shapes.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Geoboards/rubberbands</p> <p>Grid paper</p> <p>Power shapes</p> <p>Tangrams</p>
<p>PA Standard 2.10.3.A Identify right angles in the environment.</p>	<p>Teacher will guide students to:</p> <p>Identify angles and classify an angle as a right angle, greater than a right angle, or smaller than a right angle.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Geoboards/rubberbands</p> <p>Grid paper</p> <p>Power shapes</p> <p>Tangrams</p> <p>Paper uppercase Ls</p> <p>Concrete objects</p>

CONTENT: Grade Three Math

CORE CONCEPT 6: Geometry

MAJOR OBJECTIVE: Analyze the characteristics of plane and solid figures.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.10.3.B. Model right angles and right triangles using concrete objects	Teacher will guide students to: Identify right triangles based on finding right angles	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Geoboards/rubberbands Grid paper Power shapes Tangrams Paper uppercase Ls Concrete objects

CONTENT: Grade Three Math

CORE CONCEPT 7: Measurement

MAJOR OBJECTIVE: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.3.3.E Determine the appropriate unit of measure.</p>	<p>Teacher will guide students to:</p> <p>M3.B.1.2.1 Select an appropriate unit for the attribute being measured.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Rulers (standard and metric)</p> <p>Tape measures</p>

CONTENT: Grade Three Math

CORE CONCEPT 7: Measurement

MAJOR OBJECTIVE: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.3.3.B Determine the measurement of objects with non-standard and standard units (e.g., US customary and metric).	Teacher will guide students to: M3.B.2.1.1 Use a ruler (provided) to measure to the nearest ½ inch.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Ruler

CONTENT: Grade Three Math

CORE CONCEPT 7: Measurement

MAJOR OBJECTIVE: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.3.3.G. Estimate and verify measurements.</p>	<p>Teacher will guide students to:</p> <p>M3.B.2.2.1 Match the object with its appropriate measurement (all measurements given must be in the same system).</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Supplemental materials</p> <p>Rulers (standard and metric)</p> <p>Tape measures</p> <p>Scales</p> <p>Measuring cups</p>

CONTENT: Grade Three Math

CORE CONCEPT 7: Measurement

MAJOR OBJECTIVE: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.3.3.H. Demonstrate that a single object has different attributes that can be measured in different ways (e.g., length, mass, weight, time, area, temperature, capacity, perimeter).	Teacher will guide students to: M3.B.1.2.2 Compare and/or order objects according to length, area, or weight.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Rulers (standard and metric) Tape measures Scales Measuring cups

CONTENT: Grade Three Math

CORE CONCEPT 7: Measurement

MAJOR OBJECTIVE: Investigate the measurable attributes of objects and figures and apply appropriate techniques and tools to determine the measurements.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.3.3.F. Use concrete objects to determine area and perimeter.	Teacher will guide students to: Investigate area and perimeter of polygons by constructing shapes using given criteria on grid paper.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Supplemental materials Grid paper Ruler

CONTENT: Grade Three Math

CORE CONCEPT 8: Fractions

MAJOR OBJECTIVE: Identify fractions and mixed numbers, equivalent fractions, and to compare and order fractions.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.1.3.B. Use whole numbers and fractions to represent quantities.</p>	<p>Teacher will guide students to:</p> <p>M3.A.1.2.1 Write the fraction that corresponds to a drawing or part of a set (numerators 1-9, denominators 2-10. No equivalent or improper fractions or mixed numbers.)</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Fraction strips Fraction Stack Magnetic fraction pieces Fraction games Flash cards</p>
<p>PA Standard 2.1.3.D. Use drawings, diagrams or models to show the concept of fraction as part of a whole.</p>	<p>Teacher will guide students to:</p> <p>M3.A.1.2.2 Create a drawing or set that represents a given fraction (numerators 1-9, denominators 2-10. No equivalent or improper fractions or mixed numbers.)</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Supplemental materials Fraction strips Fraction Stack Magnetic fraction pieces Fraction games Flash cards</p>

CONTENT: Grade Three Math

CORE CONCEPT 9: Algebra/Calculus

MAJOR OBJECTIVE: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.8.3.A Recognize, describe, extend, create and replicate a variety of patterns including attribute, activity, number and geometric patterns.	Teacher will guide students to: M3.D.1.1.1 Extend or find a missing element in a pattern of numbers or shapes (pattern must show three repetitions-if multiples are used, limit to 2, 3 or 5).	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Chalkboard

CONTENT: Grade Three Math

CORE CONCEPT 9: Algebra/Calculus

MAJOR OBJECTIVE: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.8.3.C. Substitute a missing addend in a number sentence.</p>	<p>Teacher will guide students to:</p> <p>M3.D.2.2.1 Find a missing number that makes a number sentence true (1-digit or 2-digit numbers up to 18 using +, - or x through 9×5).</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Chalkboard</p>

CONTENT: Grade Three Math

CORE CONCEPT 9: Algebra/Calculus

MAJOR OBJECTIVE: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.8.3.D. Create a story to match a given combination of symbols and numbers.</p>	<p>Teacher will guide students to:</p> <p>M3.D.2.1.1 Create or match a story to a given combination of symbols (+, -, x, >, <, =) and numbers.</p> <p>M3.D.2.1.2 Choose the number sentence that matches a given story (one operation, + or – only).</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Partner projects</p> <p>Individuals during whole group instruction</p> <p>Individuals during small group work</p> <p>Individuals during small group activity</p> <p>Whole group discussion</p> <p>Teacher observation</p> <p>Oral question and answer</p> <p>Independent activities</p> <p>Student tests/quizzes</p>	<p>Textbook resources</p> <p>Technology resources</p> <p>Journal or notebook</p> <p>Chalkboard</p> <p>Drawing paper</p>

CONTENT: Grade Three Math

CORE CONCEPT 9: Algebra/Calculus

MAJOR OBJECTIVE: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.8.3.E. Use concrete objects and symbols to model the concepts of variables, expressions, equations and inequalities.</p>	<p>Teacher will guide students to:</p> <p>M3.D.2.2.2 Identify the missing symbol (+, -, x, >, <, =) that makes a number sentence true.</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Chalkboard</p>
<p>PA Standard 2.8.3.I Demonstrate simple function rules.</p>	<p>Teacher will guide students to:</p> <p>M3.D.1.1.2 Identify/describe the rule for a pattern shown (pattern must show three repetitions-if multiples are used, limit to 2, 3 or 5).</p>	<p>Teacher evaluation of:</p> <p>Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Chalkboard</p>

CONTENT: Grade Three Math

CORE CONCEPT 9: Algebra/Calculus

MAJOR OBJECTIVE: Apply combinations of symbols and numbers to represent expressions, equations, inequalities and extend patterns that model mathematical situations.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 2.8.3.J Analyze simple functions and relationships and locate points on a simple grid.	Teacher will guide students to: Identify locations of points with whole number coordinates on a 2-dimensional coordinate system.	Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes	Textbook resources Technology resources Journal or notebook Chalkboard Grid paper

CONTENT: Grade Three Math

CORE CONCEPT 10: Probability

MAJOR OBJECTIVE: Investigate chance to determine the likelihood of an event and list the possible results of an event to determine the difference between the predicted and actual outcomes.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.7.3.A. Predict and measure the likelihood of events and recognize the results of an experiment may not match predicted outcomes.</p>	<p>Teacher will guide students to:</p> <p>Assess whether different outcomes of the same event are equally likely or not equally likely.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Spinners Dice Colored Cubes Coins</p>
<p>PA Standard 2.7.3.C. List or graph the possible results of an experiment.</p>	<p>Teacher will guide students to:</p> <p>Demonstrate and review the outcomes of an experiment and create a list/graph of the results.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Spinners Dice Colored Cubes Coins</p>

CONTENT: Grade Three Math

CORE CONCEPT 10: Probability

MAJOR OBJECTIVE: Investigate chance to determine the likelihood of an event and list the possible results of an event to determine the difference between the predicted and actual outcomes.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 2.7.3.D. Analyze data using the concepts of largest, smallest, most often, least often and middle.</p>	<p>Teacher will guide students to: Evaluate data and verify results using the concepts of largest, smallest, most often, least often and middle.</p>	<p>Teacher evaluation of: Student performance Partner projects Individuals during whole group instruction Individuals during small group work Individuals during small group activity Whole group discussion Teacher observation Oral question and answer Independent activities Student tests/quizzes</p>	<p>Textbook resources Technology resources Journal or notebook Spinners Dice Colored Cubes Coins</p>

V. EXPECTED LEVELS OF ACHIEVEMENT

A. Students are expected to reach the proficient level of achievement in mathematics. These skills include all of those noted in the specific content area of this curriculum.

B. Grading system this course is as follows:

Grading Scale	
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%.