WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

# COURSE DESCRIPTION

## Course Title: Mathematics- Grade 3

**Course Number:**  08323

**Course Prerequisites:**  Completion of Mathematics- Grade 2

Course Description: (Include “no final exam” or “final exam required”)

This course continues to strengthen and prepare students for real world math applications and to be able to communicate mathematically. Content throughout third grade will also strengthen and build previously learned math skills. Students will be involved in hands-on activities that provide daily challenges to enhance student achievement.

Suggested Grade Level: Third Grade

**Length of Course:**        One Semester X Two Semesters       Other (Describe)

## Units of Credit: None (Insert *NONE* if appropriate.)

PDE *Certification and Staffing Policies and Guidelines (CSPG)* Required Teacher Certification(s) (Insert certificate title and CSPG#) Elementary Education CSPG # 41

Certification verified by WCSD Human Resources Department:

 X Yes       No

Board Approved Textbooks, Software, Materials:

**Title**: **Mathematics**

**Publisher**: **Scott Foresman**

ISBN #: 0-328-26366-4

Copyright Date: 2008

Date of WCSD Board Approval:

BOARD APPROVAL:

 Date Written: May 2012

 Date Approved:

 Implementation Year: 2012-2013

Suggested Supplemental Materials: (List or insert None) Successmaker/Successmaker Enterprises, geoboards, color tiles, tangrams, clocks, dice, spinners, pattern blocks, snap cubes, coins and dollar bills, rulers, base ten blocks, elasped time rulers, and calculators

Course Standards

PA Academic Standards: (List by Number and Description)

2.1 Numbers and Operations

2.2 Algebraic Concepts

2.3 Geometry

2.4 Data Analyis and Probability

PA Common Core Standards: (List by Number and Description)

2.1 Numbers and Operations

 (B) Number and Operations in Base Ten

 (C) Number and Operations-Fractions

2.2 Algebraic Concepts

 (A) Operations and Algebraic Thinking

2.3 Geometry

 (A) Geometry

2.4 Data Analysis and Probability

 (A) Measurement and Data

WCSD Academic Standards: (List or None)

None

Industry or Other Standards: (List, Identify Source or None)

None

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student’s Individual Education Plan (IEP) or Gifted Individual Education Plan (GIEP).

SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS AND ELIGIBLE CONTENT WHERE APPLICABLE

(List Objectives, PA Standards #’s, Other Standards (see samples at end))

Mastery is defined as the student’s ability to demonstrate the knowledge, skills, and abilities described by an eligible content.

Introduction is defined as when grade appropriate instruction pertaining to an eligible content should begin.

**PA Standard: 2.1 Numbers and Operations**

**M03.A-T Numbers and Operations in Base Ten**

|  |  |  |  |
| --- | --- | --- | --- |
| **STD or EC Code** | **Performance Indicators** | **Mastery** | **Introduced** |
| M3.A.1.1.1 | Match the word name with the appropriate whole number (up through 9,999). | X |  |
| M3.A.1.1.2 | Differentiate between and/or give examples of even and odd number (limit to 3 digits). | X |  |
| M3.A.1.1.3 | Compare two whole numbers using greater than (>), less than (<) or equal to (=) (up through 9,999). | X |  |
| M03.A-T.1.1.1 | Round two- and three-digit whole numbers to the nearest ten or hundred, respectively. | X |  |
| M03.A-T.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). | X |  |
| M3.A.1.1.5 | Match a symbolic representation of numbers to appropriate whole numbers (e.g., base ten blocks, 7 hundreds, 4 tens and 8 ones, etc). | X |  |
| M3.A.3.1.1 | Solve single- and double- digit addition and subtraction problems with and without regrouping in vertical or horizontal form. | X |  |
| M3.A.3.2.1 | Estimate sums and differences of quantities; round 2-digit numbers to the nearest 10, and 3 digit numbers to the nearest 100, before computing (limit to two numbers). | X |  |
| M03.A-T.1.1.2  | Add two- and three-digit whole numbers (limit sums from 100 through 1000), and/or subtract two- and three-digit numbers from three-digit whole numbers. | X |  |
| M3.A.2.1.1  | Represent multiplication as repeated addition.  | X |  |
| M03.A-T.1.1.3 | Multiply one-digit whole numbers by two-digit multiples of 10 (from 10-90). | X |  |
| M3.A.2.1.3  | Identify the correct operation(s) to solve a word problem (no more than 2 operations using +, - and/or ×). | X |  |
| M4.A.1.1.3 | Match the standard number form to the word form of decimal numbers (through the tenths place). |  | X |
| M4.A.1.2.2 | Compare and/or order whole numbers through 6 digits and amounts of money to $100 (limit sets for ordering, to no more than 4 numbers). |  | X |
| M4.A.1.3.1 | Find/list/identify all factors through 10 of any given number. |  | X |
| M4.A.3.1.3 | Estimate the answer to addition, subtraction and multiplication problems using whole numbers through 6 digits (for multiplication, no more than 2 digits × 1 digit, excluding powers of 10). |  | X |
| M4.A.3.2.1 | Solve addition or subtraction problems involving decimals through hundredths (decimal numbers must have the same number of places). |  | X |
| M5.A.1.2.1  | Match the standard form to the word form of decimal numbers through the hundredths. |  | X |
| M5.A.1.3.1 | Compare whole numbers through 9 digits using the words more, less, equal, least, most, greater than, less than or the symbols <, >, =. |  | X |
| M5.A.1.4.1 | Locate/Identify integers on a number line (greater than or equal to -20). |  | X |

**PA Standard: 2.1 Numbers and Operations**

**M03.A-F Numbers and Operations- Fractions**

|  |  |  |  |
| --- | --- | --- | --- |
| **STD or EC Code** | **Performance Indicators** | **Mastery** | **Introduced** |
| M03.A-F.1.1.1 | Demonstrate that the numerator represents parts of the whole. (limit the denominators to 2, 3, 4, 6, and 8; limit the numerators to whole numbers less than the denominator; no simplification necessary.) | X |  |
| M03.A-F.1.1.2 | Represent fractions on a number line (limit the denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; no simplification necessary). | X |  |
| M03.A-F.1.1.3  | Recognize and generate simple equivalent fractions (limit the denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; no simplification necessary). | X |  |
| M03.A-F.1.1.4 | Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers (limit the denominators to 1, 2, 3, 4, 6 and 8). | X |  |
| M03.A-F.1.1.5 | Compare two fractions with the same denominators to 1, 2, 3, 4, 6 and 8), using the symbols >, =, <, and/or justify the conclusions. | X |  |
| 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). | X |  |
| M4.A.1.1.1 | Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set—no simplification necessary. |  | X |
| M4.A.1.1.2 | Create a drawing or set that represents a given fraction or decimal, including mixed numbers (through the tenths). |  | X |
| M4.A.3.2.2 | Solve addition or subtraction problems with fractions with like denominators (denominators to 10, no simplifying necessary). |  | X |

**PA Standard: 2.2 Algebraic Concepts**

**M03.B-O Operations and Algebraic Thinking**

|  |  |  |  |
| --- | --- | --- | --- |
| **STD or EC Code** | **Performance Indicators** | **Mastery** | **Introduced** |
| M03.B-O.1.1.1 | Interpret and/or describe products of whole numbers (up to and including 10 x 10) | X |  |
| M03.B-O.1.1.2 | Interpret and/or describe whole-number quotients of whole numbers (limit dividends through 50, and limit divisors and quotients through 10.) | X |  |
| M03.B-O.1.2.1 | Use multiplication (up to and including 10 x10) and/or division (limit dividends through 50, and limit divisors and quotients through 10) to solve word problems in situations involving equal groups , arrays, and/or measurement quantities. | X |  |
| M03.B-O.1.2.2 | Determine the unknown whole number in a multiplication (up to and including 10 x10) or division (limit dividends through 50, an dlimit divisors and quotients through 10) equation relating three whole numbers. | X |  |
| M03.B-O.3.1.4 | Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols). | X |  |
| M03.B-O.2.1.1 | Apply the commutative property of multiplication (not identification or definition of the property.) | X |  |
| M03.B-O.2.1.2 | Apply the associative property of multiplication (not identification or definition of the property.) | X |  |
| M03.B-O.2.2.1 | Interpret and/or model division as a multiplication equation with an unknown factor.  | X |  |
| M03.B-O.3.1.1 | Solve two-step word problem, using the four operations (expressions are not explicitly stated). Limit to problems with whole numbers and having whole-number answers. | **X** |  |
| M03.B-O.3.1.2 | Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-number answers. | **X** |  |
| M03.B-O.3.1.3 | Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole-number answers. | **X** |  |
| M03.B-O.3.1.6 | Create or match a story to a given combination of symbols (+, –, x, <, >, =) and numbers. | X |  |
| M03.B-O.3.1.7 | Identify the missing symbol (+, -, =, <, >) that makes a number sentence true. | X |  |
| M3.D.1.1.1 | Extend or find a missing element in a pattern of numbers or shapes (pattern must show 3 repetitions—if multiples are used, limit to 2, 3 or 5). | X |  |
| M3.D.1.1.2 | Identify/describe the rule for a pattern shown (pattern must show 3 repetitions—if multiples are used, limit to 2, 3 or 5). | X |  |
| 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 x 5). | X |  |
| M4.D.1.1.1 | Extend or find a missing element in a numerical or geometric pattern (+, - or x may be used—numerical patterns must be whole numbers).  |  | X |
| M4.D.1.1.2 | Identify/describe the rule for a numerical or geometric pattern shown (+, - or x may be used—numerical patterns must be whole numbers).  |  | X |
| M5.D.1.1.1 | Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or ÷ of whole numbers). Pattern must show 3 repetitions. |  | X |
| M5.D.1.1.2 | Create or replicate a numerical or geometric pattern showing 3 repetitions of that pattern (+, -, x or ÷ of whole numbers may be used). |  | X |
| M5.D.1.2.1 | 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.  |  | X |
| M5.D.2.1.2 | Match a realistic situation to an equation, expression, inequality (<, >, =), table or graph (variable must be isolated, e.g., 17 + 39 = n).  |  | X |
| M6.D.1.1.1 | Create, extend or find a missing element in a pattern displayed in a table, chart or graph (pattern must show at least 3 repetitions—may use up to 2 operations with whole numbers).  |  | X |
| M6.D.1.2.1 | Determine a rule based on a pattern or illustrate a pattern based on a given rule (displayed on a table, chart or graph; pattern must show at least 3 repetitions).  |  | X |
| M7.D.1.1.1 | Describe, extend or find a missing element of a pattern (show 3 repetitions of the pattern)• fractions or decimals - may use only one operation from +, - or x• whole numbers – may use only one operation from +, -, x, ÷ or squares. |  | X |
| M8.D.1.1.1 | Continue a numeric or algebraic pattern (pattern must show 3 repetitions—may include up to 2 operations, squares and square roots).  |  | X |
| M8.D.1.1.2 | Find missing elements in numeric or geometric patterns and/or functions (may be given a table or rule—pattern must show 3 repetitions).  |  | X |
| M6.D.2.1.1 | Identify the inverse operation needed to solve a one-step equation.  |  | X |
| M7.D.2.1.1 | Select and/or use appropriate strategies to solve one-step equations (no negative numbers).  |  | X |

PA Standard: 2.3 Geometry

Geometry

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| --- | --- | --- | --- |
| **STD or EC Code** | **Performance Indicators** | **Mastery** | **Introduced** |
| M3.C.1.1.1 | Name/identify/describe geometric shapes in two dimensions (circle, square, rectangle, triangle, pentagon, hexagon, octagon). | X |  |
| M3.C.1.1.2 | Name/identify geometric shapes in three dimensions (sphere, cube, cylinder, cone, pyramid, rectangular prism). | X |  |
| M3.C.2.1.1  | Identify/draw one line of symmetry in a two-dimensional figure. | X |  |
| M3.C.2.1.2 | Identify symmetrical two-dimensional shapes. | X |  |
| M03.C-G.1.1.3 | Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.  | X |  |

PA Standard: 2.4 Data Analysis and Probability:

Measurement and Data

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| --- | --- | --- | --- |
| **STD or EC Code** | **Performance Indicators** | **Mastery** | **Introduced** |
| M3.B.1.1.3 | Identify times of the day and night as AM and PM. | X |  |
| M03.D-M.1.1.1 | Tell/show and/or write time (analog) to the nearest minute. | X |  |
| M03.D-M.1.1.2 | Calculate elapsed time to the minute in a given situation(total elasped time limited to 60 minutes or less). | X |  |
| M03.D-M.1.2.3 | Use a ruler to measure lengths to the nearest quarter inch or centimeter. | X |  |
| M03.D-M.1.3.1 | Compare total values of combinations of coins (penny, nickel, dime, quarter) and/or dollar bills less than $5.00. | X |  |
| M03.D-M.1.3.2 | Make change for an amount up to $5.00 with no more than $2.00 change given (penny, nickel, dime, quarter, dollar). | X |  |
| M03.D-M.1.3.3 | Round amounts of money to the nearest dollar. | X |  |
| M03.D-M.3.1.1 | Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard square units) | X |  |
| M03.D-M.3.1.2 | Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. | X |  |
| M03.D-M.4.1.1 | Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter of a given side lengths finding an unknown side length, exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Us the same units throughout the problem. | X |  |
| M3.B.1.2.1 | Select an appropriate unit for the attribute being measured. | X |  |
| M3.B.2.2.1  | Match the object with its approximate measurement (all measurements given must be of the same system, e.g., about how tall is a soda pop can? 5 inches, 5 feet, 5 yards, etc.). | X |  |
| M03.D-M.1.2.1 | Measure and estimate liquid volumes and masses of objects using standard units (cups [c], pints [pt], quarts [qt], gallons [gal], ounces [oz], and pounds [lb]) and metric units (liters [l], grams [g], and kilograms [kg] | X |  |
| M03.D-M.1.2.2 | Add, subtract, multiply, and divide to solve word problems involving masses or liquid volumes that are given in the same units.  | X |  |
| M3.B.1.2.2 | Compare and/or order objects according to length, area, or weight. | X |  |
| M5.B.1.2.1  | 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).• Metric using mm, cm, m and km; mL and L; g and kg• Customary using cup, pint, quart, gallon; in, ft, yd; oz, lb  |  | X |
| M5.B.2.2.3 | Solve problems involving weight, time, temperature, length and capacity (with the same units throughout—limited to 3 digits). |  | X |
| 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.  | X |  |
| M03.D-M.2.1.2 | Solve one- and two-step problems using information to interpret data presented in the scaled pictographs and scaled bar graphs (scales limited to 1, 2, 5, and 10.) | X |  |
| M03.D-M.2.1.1 | Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories (scales limited to 1, 2, 3, and 10.) | X |  |
| M03.D-M.2.1.3 | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units-whole numbers, halves or quarters. | X |  |
| M03.D-M.2.1.4 | 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. | X |  |

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments: The teacher will develop and use standards-based assessments throughout the course.

Portfolio Assessment:       Yes X No

District-wide Final Examination Required:       Yes X No

Course Challenge Assessment (Describe):

Not applicable

# REQUIRED COURSE SEQUENCE AND TIMELINE

(Content must be tied to objectives)

Highlighted anchors are introductory anchors

###  Content Sequence Dates

**Place Value/Number Sense August/September**

M3.A.1.1.1

M3.A.1.1.2

M3.A.1.1.3

M03.A-T.1.1.1

M03.A-T.1.1.4

M3.A.1.1.5

M4.A.1.1.3

M4.A.1.2.2

M5.A.1.2.1

M5.A.1.3.1

M5.A.1.4.1

**Addition October**

M3.A.2.1.3

M3.A.3.1.1

M3.A.3.2.1

M03.A-T.1.1.2

M03.B-O.3.1.1

M03.B-O.3.1.2

M03.B-O.3.1.3

M03.B-O.3.1.4

M03.B-O.3.1.6

M03.B-O.3.1.7

M4.A.3.1.3

M4.A.3.2.1

M5.D.2.1.2

M6.D.2.1.1

M7.D.2.1.1

**Subtraction November**

M3.A.2.1.3

M3.A.3.1.1

M03.A-T.1.1.2

M03.B-O.3.1.1

M03.B-O.3.1.2

M03.B-O.3.1.3

M03.B-O.3.1.4

M03.B-O.3.1.6

M03.B-O.3.1.7

M3.A.3.2.1

M4.A.3.1.3

M4.A.3.2.1

M5.D.2.1.2

M6.D.2.1.1

M7.D.2.1.1

**Money December**

M03.D-M.1.3.1

M03.D-M.1.3.2

M03.D-M.1.3.3

M4.A.1.2.2

**Multiplication December/January**

M3.A.2.1.1

M03.B-O.1.1.1

M03.B-O.2.1.1

M03.B-O.2.1.2

M03.B-O.3.1.1

M03.B-O.3.1.3

M03.B-O.3.1.6

M03.A-T.1.1.3

M4.A.1.3.1

M4.A.3.1.3

**\*\*\*Multiplication facts are introduced beginning in December and continued throughout the year until mastered.**

**Division December/January**

M03.B-O.1.2.2

M03.B-O.1.1.2

M03.B-O.2.2.1

M03.B-O.3.1.1

**Patterns February**

M3.D.1.1.1

M3.D.1.1.2

M3.D.2.2.1

M4.D.1.1.1

M4.D.1.1.2

M5.D.1.1.1

M5.D.1.1.2

M5.D.1.2.1

M6.D.1.1.1

M6.D.1.2.1

M7.D.1.1.1

M8.D.1.1.1

M8.D.1.1.2

**Fractions February**

M3.A.1.2.2

M03.A-F.1.1.1

M03.A-F.1.1.2

M03.A-F.1.1.3

M03.A-F.1.1.4

M03.A-F.1.1.5

M03.C-G.1.1.3

M4.A.1.1.1

M4.A.1.1.2

M4.A.3.2.2

**Measurement March**

M03.D-M.1.2.3

M3.B.1.2.1

M3.B.2.2.1

M03.D-M.1.2.1

M3.B.1.2.2

M03.D-M.1.2.2

M5.B.1.2.1

M5.B.2.2.3

**Data Analysis April**

M3.E.1.1.1

M03.D-M.2.1.2

M03.D-M.2.1.1

M03.D-M.2.1.3

M03.D-M.2.1.4

**Geometry May**

M3.C.1.1.1

M3.C.1.1.2

M3.C.2.1.1

M3.C.2.1.2

M03.D-M.3.1.1

M03.D-M.3.1.2

M03.D-M.4.1.1

**Time May/June**

M3.B.1.1.3

M03.D-M.1.1.1

M03.D-M.1.1.2

**Objectives:**

**Students will:**

* Apply place value understanding and properties of operations to perform multi-digit arithmetic.
* Explore and develop an understanding of fractions as numbers.
* Represent and solve problems involving multiplication and division.
* Understand properties of multiplication and the relationship between multiplication and division.
* Solve problems involving the four operations, and identify and explain patterns in arithmetic.
* Identify, compare, and classify shapes and their attributes.
* Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole.
* Tell time and write time to the nearest minute and solve problems by calculating time intervals.
* Solve problems involving measurement and estimation of temperature, liquid volume, mass or length.
* Solve problems involving money using a combination of coins and bills.
* Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.
* Determine the area of a rectangle and apply the concept to multiplication and division.
* Solve problems involving perimeters of polygons and distinguish between linear and area measures.

**WRITING TEAM:** Warren County School District Math Teachers

# WCSD STUDENT DATA SYSTEM INFORMATION

 1. Is there a required final examination?       Yes X No

 2. Does this course issue a mark/grade for the report card? X Yes       No

 3. Does this course issue a Pass/Fail mark?       Yes X No

1. Is the course mark/grade part of the GPA calculation?       Yes X No

 5. Is the course eligible for Honor Roll calculation?       Yes X No

6. What is the academic weight of the course?

 X No weight/Non credit       Standard weight

       Enhanced weight (Describe)