

**MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2**

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL				
Strand 1: Number and Operations				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Number Sense	1	Express whole numbers 0 to 1000, in groups of hundreds, tens and ones using and connecting multiple representations.	1	Make a model to represent a given whole number 0 through 999.
			2	Identify a whole number represented by a model with a word name and symbol 0 through 999.
			4	Identify whole numbers through 999 in or out of order.
			5	Write whole numbers through 999 in or out of order.
			7	State verbally whole numbers, through 999, using correct place value (e.g., A student will read <u>528</u> as five hundreds, two tens, and eight ones.).
			8	Construct models to represent place value concepts for the one's, ten's, and hundred's places.
			9	Apply expanded notation to model place value through 999 (e.g., $378 = 3 \text{ hundreds} + 7 \text{ tens} + 8 \text{ ones}$).
	2	Count forward to 1000 and backward from 1000 by 1s, 10s, and 100s using different starting points.	3	Count aloud, forward or backward, in consecutive order (0 through 999).
	3	*Identify numbers which are 100 more or less than a given number to 900.*		
	4	Compare and order whole numbers through 1000 by applying the concept of place value.	11	Compare two whole numbers through 999.
13			Order three or more whole numbers through 999 (least to greatest or greatest to least).	
M02-S1C2-13			Apply the symbols: +, -, x, ÷, =, ≠, <, >, %. (symbols: +, -, =, ≠, <, >)	

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 1: Number and Operations				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Number Sense	5	Count money to \$1.00.	16	Count money through \$5.00 using manipulatives and pictures of bills and coins.
			17	Identify the value of a collection of money using the symbols ¢ and \$ through \$5.00.
			M01-S1C1-16	Identify money by name and value: penny, nickel, dime, quarter, and one dollar.
			M01-S1C1-17	Count money through \$1.00 using coins.
			M01-S1C1-18	Identify the value of a collection of coins using the symbols ¢ and \$.
	6	Sort whole numbers through 1000 into odd and even, and justify the sort.	10	Identify odd and even (including 0) whole numbers through 999.
			M01-S1C1-10	Identify odd and even whole numbers through 100.
	M02-S3C3-01	Moved to Strand 3 Concept 3	6	State equivalent forms of whole numbers using multiples of 10 through 1,000 ($430 + 200 = 600 + 30$).
	M01-S1C1-05	Moved to Grade 1	12	Use ordinal numbers.
	M03-S1C1-05	Moved to Grade 3	14	Make models that represent given fractions (halves and fourths).
	M03-S1C1-05	Moved to Grade 3	15	Identify in symbols and words a model that is divided into equal fractional parts (halves and fourths).
	M02-S1C2-01	Moved to Strand 1 Concept 2	18	Use decimals through hundredths in contextual situations with money.
	M04-S1C1-04	Moved to Grade 4	19	Compare two decimals using money, through hundredths, using models, illustrations, or symbols.
	M05-S1C1-01	Moved to Grade 5	20	Distinguish the equivalency among decimals, fractions and percents (e.g., half-dollar = $50¢ = 50%$).

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 1: Number and Operations				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
2. Numerical Operations	1	Solve contextual problems using multiple representations involving <ul style="list-style-type: none"> • addition and subtraction with one- and/or two-digit numbers, • multiplication for 1s, 2s, 5s, and 10s, and • adding and subtracting money to \$1.00. 	8	Solve word problems using addition and subtraction of two 2-digit numbers, with regrouping AND two 3-digit numbers without regrouping.
			17	Add and subtract money without regrouping using manipulatives and paper and pencil, through \$5.00.
			M02-S1C1-18	Use decimals through hundredths in contextual situations with money.
	2	Demonstrate the ability to add and subtract whole numbers (to two digits) and decimals (in the context of money) <ul style="list-style-type: none"> • with up to three addends and • to \$1.00. 	1	Demonstrate the process of addition through two three-digit whole numbers, using manipulatives.
			2	Demonstrate the process of subtraction using manipulatives with two-digit whole numbers.
			4	Add one- and two-digit whole numbers with regrouping.
			5	Subtract one- and two-digit whole numbers with regrouping.
			6	Add 3 one- or two-digit addends.
			M01-S1C2-16	Add and subtract money without regrouping using manipulatives and paper and pencil, through 99¢.
	3	Demonstrate fluency of addition and subtraction facts.	3	State addition and subtraction facts.
	4	Apply and interpret the concept of addition and subtraction as inverse operations to solve problems.	12	Apply grade-level appropriate properties to assist in computation.
			M01-S1C2-11	Identify addition and subtraction as inverse operations.
	5	Create and solve word problems based on addition and subtraction of two-digit numbers.	8	Solve word problems using addition and subtraction of two 2-digit numbers, with regrouping AND two 3-digit numbers without regrouping.
			M02-S5C1-01	Create contextual problems that require addition or subtraction with one- or two-digit numbers.

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GRADE 2

Strand 1: Number and Operations

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CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION	
2. Numerical Operations	6	Demonstrate the concept of multiplication for 1s, 2s, 5s, and 10s.	10	State multiplication facts: 2s, 5s and 10s.	
	7	*Describe the effect of operations (addition and subtraction) on the size of whole numbers.*			
	8	Apply properties to solve addition/subtraction problems <ul style="list-style-type: none"> • identity property of addition/subtraction, • commutative property of addition, and • associative property of addition. 	11	Demonstrate the associative property of addition [e.g., $(3 + 5) + 4 = 3 + (5 + 4)$].	
			12	Apply grade-level appropriate properties to assist in computation.	
			REMOVED (This skill is required throughout the standard).	7	Select the grade-level appropriate operation to solve word problems.
			REMOVED	9	Count by multiples of three.
	M02-S1C1-04 M02-S3C3-02 M02-S3C3-03 M02-S3C3-04	Moved to Strand 1 Concept 1 and Strand 3 Concept 3 (+, -, =, ≠, <, >) REMOVED (x, ÷, %)	13	Apply the symbols: +, -, x, ÷, =, ≠, <, >, %.	
		REMOVED (This skill is required throughout the standard).	14	Use grade-level appropriate mathematical terminology.	
	M04-S1C2-01	Moved to Grade 4	15	Demonstrate addition of fractions with like denominators (halves and fourths) using models.	
			16	Demonstrate subtraction of fractions with like denominators (halves and fourths) using models.	

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**MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2**

Strand 1: Number and Operations				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
3. Estimation	1	*Use estimation to determine if sums of two 2-digit numbers are more or less than 20, more or less than 50, or more or less than 100.*		
	M03-S1C3-01	Moved to Grade 3	1	Solve problems using a variety of mental computations and reasonable estimation.
	M02-S4C4-02	Moved to Strand 4 Concept 4	2	Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.
	M02-S4C4-02	Moved to Strand 4 Concept 4	3	Compare an estimate to the actual measure.
	M03-S4C4-02	Moved to Grade 3		
	M03-S1C3-01	Moved to Grade 3	4	Evaluate the reasonableness of an estimate.

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**MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2**

Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Data Analysis (Statistics)	1	Collect, record, organize, and display data using pictographs, frequency tables, or single bar graphs.	2	Make a simple pictograph or tally chart with appropriate labels from organized data.
	2	Formulate and answer questions by interpreting displays of data, including pictographs, frequency tables, or single bar graphs.	3	Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest.
			4	Answer questions about a pictograph using terms such as most, least, equal, more than, less than, and greatest.
			5	Formulate questions based on graphs, charts, and tables.
			6	Solve problems using graphs, charts, and tables
		REMOVED	1	Formulate questions to collect data in contextual situations.
2. Probability		No performance objectives at this grade level.		
	M04- S2C2-01	Moved to Grade 4	1	Name the possible outcomes for a probability experiment.
			2	Predict the most likely or least likely outcome in probability experiments (e.g., Predict the chance of spinning one of the 2 colors on a 2-colored spinner.).
	M05- S2C2-02	Moved to Grade 5	3	Predict the outcome of a grade-level appropriate probability experiment.
			4	Record the data from performing a grade-level appropriate probability experiment.
			5	Compare the outcome of an experiment to predictions made prior to performing the experiment.
			6	Compare the results of two repetitions of the same grade-level appropriate probability experiment.

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
3. Systematic Listing and Counting	1	List all possibilities in counting situations.	1	Make arrangements that represent the number of combinations that can be formed by pairing items taken from 2 sets, using manipulatives (e.g., How many types of sandwiches can one make with 3 different types of fillings and 2 types of bread if only one type of bread and 1 kind of filling is used for each sandwich?).
			M00-S2C3-01	Make arrangements that represent the number of combinations that can be formed by pairing items taken from 2 sets, using manipulatives (e.g., How many outfits can one make with 2 different color shirts and 2 different pairs of pants?).
	2	*Solve a variety of problems based on the addition principle of counting.*		
4. Vertex-Edge Graphs	1	Color simple pictures or maps using the least number of colors and justify the coloring.	M00- to M05-S2C4-01	Color pictures with the least number of colors so that no common edges share the same color (increased complexity throughout grade levels).
	2	*Build vertex-edge graphs using concrete materials and explore properties of vertex-edge graphs <ul style="list-style-type: none"> • number of vertices and edges, • neighboring vertices, and • paths in a graph.* 		
	3	*Construct simple vertex-edge graphs from simple pictures or maps.*		

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 3: Patterns, Algebra, and Functions				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Patterns	1	Recognize, describe, extend, create, and find missing terms in a numerical or symbolic pattern.	2	Extend a grade-level appropriate repetitive pattern (e.g., 12, 22, 32, _____, _____).
			3	Create grade-level appropriate patterns.
	2	Explain the rule for a given numerical or symbolic pattern and verify that the rule works.	1	Communicate a grade-level appropriate pattern, using symbols or numbers (e.g., ∇ , O, Δ , ∇ , O, Δ , ∇ , _____, _____, _____).
2. Functions and Relationships	1	Describe a rule that represents a given relationship between two quantities using words or pictures.	1	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).
			M04-S3C2-01	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model).
			M05-S3C2-01	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model).
3. Algebraic Representations	1	Record equivalent forms of whole numbers to 1000 by constructing models and using numbers.	M02-S1C1-06	State equivalent forms of whole numbers using multiples of 10 through 1,000 ($430 + 200 = 600 + 30$).
			2	Compare expressions using spoken words and the symbols =, \neq , <, and >.
			M02-S1C2-13	Apply the symbols: +, -, x, \div , =, \neq , <, >, %. (symbols: =, \neq, <, and >)
			M04-S1C2-10	Apply the symbol: \cdot and () for multiplication, and \leq , \geq . (symbols: \leq and \geq)
	3	*Represent a word problem requiring addition or subtraction through 100 using an equation.*	M02-S1C2-13	Apply the symbols: +, -, x, \div , =, \neq , <, >, %. (symbols: +, -, =)

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 3: Patterns, Algebra, and Functions				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
3. Algebraic Representations	4	Identify the value of an unknown number in an equation involving an addition or subtraction fact.	1	Use variables in contextual situations.
			2	Find the missing element (addend, subtrahend, minuend, sum, and difference) in addition and subtraction number sentences for sums through 18 and minuends through 9 (e.g., $13 - \underline{\quad} = 8$).
			M02-S1C2-13	Apply the symbols: +, -, x, ÷, =, ≠, <, >, %. (symbols: +, -, =, ≠, <, >)
4. Analysis of Change		No performance objectives at this grade level.		
	M04-S3C4-01	Moved to Grade 4	1	Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).
			2	Make simple predictions based on a variable (e.g., a child's height from year to year).

Strand 4: Geometry and Measurement				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Geometric Properties	1	Describe and compare the attributes of polygons up to six sides using the terms side, vertex, point, and length.	1	Compare attributes of 2-dimensional shapes (square, rectangle, triangle, and circle).
			M04-S4C1-01	Identify the properties of 2-dimensional figures using appropriate terminology.
			M05-S4C1-01	Recognize regular polygons.
	M04-S4C1-05	Moved to Grade 4	2	Recognize congruent shapes.
	M02-S4C2-01	Moved to Strand 4 Concept 2	3	Recognize line(s) of symmetry for a 2-dimensional shape.
2. Transformation of Shapes	1	Identify, with justification, whether a 2-dimensional figure has lines of symmetry.	M01-S4C1-06	Recognize where a line of symmetry divides a two-dimensional shape into mirror images.
			M02-S4C1-03	Recognize line(s) of symmetry for a 2-dimensional shape.

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 4: Geometry and Measurement				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
2. Transformation of Shapes	M03-S4C2-01	Moved to Grade 3	1	Recognize same shape in different positions (flip/reflection).
3. Coordinate Geometry		No performance objectives at this grade level.		
4. Measurement	1	Tell time to the nearest minute using analog and digital clocks.	3	Tell time to the quarter hour using analog and digital clocks.
			M01-S4C4-03	Tell time to the hour using analog and digital clocks.
			M03-S4C4-02	Tell time with one-minute precision (analog).
	2	Apply measurement skills to measure the attributes of an object (length, capacity, weight).	1	Identify the type of measure (e.g., weight, height, and time) for each attribute of an object.
			2	Select the appropriate U.S. customary measure of accuracy: <ul style="list-style-type: none"> • length – inches, feet, yards, miles, • capacity/volume – pints, quarts, and • mass/weight – ounces.
			5	Select the appropriate tool to measure the given characteristic of an object.
			6	Measure a given object using the appropriate unit of measure: <ul style="list-style-type: none"> • length – inches, miles, • capacity/volume – pints, quarts, and • mass/weight – ounces.
			M01-S4C4-02	Select the appropriate measure of accuracy: <ul style="list-style-type: none"> • length – inches, feet, • capacity/volume – cups, gallons, and • mass/weight – pounds.
			M02-S1C3-02	Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.
			M02-S1C3-03	Compare an estimate to the actual measure.

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MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

Strand 4: Geometry and Measurement				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
4. Measurement	3	Read temperatures on a thermometer using Fahrenheit and Celsius.	M03-S4C4-05	Record temperatures to the nearest degree in degrees Fahrenheit and degrees Celsius as shown on a thermometer.
	4	Demonstrate unit conversions <ul style="list-style-type: none"> • 1 foot = 12 inches, • 1 quart = 4 cups, • 1 pound = 16 ounces, • 1 hour = 60 minutes, • 1 day = 24 hours, • 1 week = 7 days, and • 1 year = 12 months. 	7	State equivalent relationships: <ul style="list-style-type: none"> • 12 inches = 1 foot, • 60 minutes = 1 hour, • 24 hours = 1 day, • 7 days = 1 week, • 12 months = 1 year, • 100 pennies = 1 dollar, • 10 dimes = 1 dollar, and • 4 quarters = 1 dollar.
	M03-S4C4-01	Moved to Grade 3	4	Determine the passage of time using units of days and weeks within a month using a calendar.

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**MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2**

Strand 5: Structure and Logic				
CONCEPT	2008 PO	ITEM DESCRIPTION	2003 PO	ITEM DESCRIPTION
1. Algorithms and Algorithmic Thinking		No performance objectives at this grade level.		
	M02-S1C2-05	Moved to Strand 1 Concept 2	1	Create contextual problems that require addition or subtraction with one- or two-digit numbers.
2. Logic, Reasoning, Problem Solving, and Proof	1	*Identify the question(s) asked and any other questions that need to be answered in order to find a solution.*		
	2	*Identify the given information that can be used to find a solution.*		
	3	*Select from a variety of problem-solving strategies and use one or more strategies to arrive at a solution.*		
	4	*Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.*		
	5	*Explain and clarify mathematical thinking.*		
	6	*Determine whether a solution is reasonable.*		
		REMOVED	1	Identify the concepts <i>some</i> , <i>every</i> , and <i>many</i> within the context of logical reasoning.
			2	Identify the concepts <i>all</i> and <i>none</i> within the context of logical reasoning.

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