



10th Grade Correlation to Assessment Framework

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
By the beginning of 10 th grade, students should know the following:			
MATHEMATICAL PROCESSES			
A.10	Students will effectively use mathematical knowledge, skills and strategies related to reasoning, communication, connections, representation and problem solving.		
A.10.1	Use reasoning and logic to: <ul style="list-style-type: none"> Perceive patterns 	MPA-104 HA1-447 HA1-448 Throughout	Recognizing Patterns Identifying Number Patterns Finding the <i>n</i> th Term of a Pattern
	<ul style="list-style-type: none"> Identify relationships Formulate questions Pose problems Make conjectures 	Throughout Throughout Throughout MPA-006 MPA-007 Throughout	Determining Reasonableness of Answers and Appropriate Method of Computation Solving Problems Using Logical Reasoning Skills
	<ul style="list-style-type: none"> Justify strategies 	MPA-007 HA1-881 Throughout	Solving Problems Using Logical Reasoning Skills Completing and Validating Algebraic Proofs
	<ul style="list-style-type: none"> Test reasonableness of results 	MPA-006 Throughout	Determining Reasonableness of Answers and Appropriate Method of Computation
A.10.2	Communicate mathematical ideas and logical reasoning using the vocabulary of mathematics in a variety of ways e.g., using words, numbers, symbols, pictures, charts, tables, diagrams, graphs, and models.	Throughout	
A.10.3	Connect mathematics to the real world, as well as within mathematics.	Throughout	
A.10.4	Create and use representations to organize, record, and communicate mathematical ideas.	Throughout	
A.10.5	Solve and analyze routine and non-routine problems.	Throughout	
NUMBER OPERATIONS AND RELATIONSHIPS			
B.10.a.1	Compare and order real numbers.	HA1-025	Comparing and Ordering Real Numbers
B.10.a.2	Analyze and solve problems using percents.	HA1-165 HA1-170	Using Equations to Solve Percent Problems Solving Percent of Change Problems
B.10.a.3	Apply proportional reasoning and ratios in mathematical and real-world contexts.	HA1-360 MPA-079 MPA-080	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions Unit rates Solving Proportions

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
B.10.b.1	Compare, perform and explain operations on real numbers with and without context e.g., transitivity, rate of change, exponential functions, scientific notation, roots, powers, reciprocals, absolute value, ratios, proportions, percents.	MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		HA1-030	Using Opposites and Absolute Values
		HA1-035	Adding Real Numbers Using a Number Line
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
		HA1-130	Identifying Postulates, Theorems, and Properties
		HA1-235	Writing, Multiplying, and Dividing Numbers Written in Scientific Notation
		HA1-480	Finding the Square Roots of Rational Numbers
		HA1-860	Using the Laws of Exponents
		HA1-861	Simplifying Expressions with Negative and Zero Exponents
		HA1-960	Real-World Applications of Linear Functions
B.10.b.2	Select and use appropriate properties, computational procedures, and modes of representation with and without context e.g., simple and compound interest, commission, percents, proportions.	Throughout	Using Equations to Solve Percent Problems
		HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
		HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		MPA-079	Unit rates
		MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
B.10.b.3	Determine reasonableness of answers.	Throughout	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
B.10.a.1	Compare and order real numbers.	HA1-025	Comparing and Ordering Real Numbers
B.10.a.2	Analyze and solve problems using percents.	HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
B.10.a.3	Apply proportional reasoning and ratios in mathematical and real-world contexts.	HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		MPA-079	Unit rates
		MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
B.10.b.1	Compare, perform and explain operations on real numbers with and without context e.g., transitivity, rate of change, exponential functions, scientific notation, roots, powers, reciprocals, absolute value, ratios, proportions, percents.	HA1-030	Using Opposites and Absolute Values
		HA1-035	Adding Real Numbers Using a Number Line
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
		HA1-130	Identifying Postulates, Theorems, and Properties
		HA1-235	Writing, Multiplying, and Dividing Numbers Written in Scientific Notation
		HA1-480	Finding the Square Roots of Rational Numbers
		HA1-860	Using the Laws of Exponents
		HA1-861	Simplifying Expressions with Negative and Zero Exponents

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
		HA1-960	Real-World Applications of Linear Functions
		Throughout	
B.10.b.2	Select and use appropriate properties, computational procedures, and modes of representation with and without context e.g., simple and compound interest, commission, percents, proportions.	HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
		HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		MPA-079	Unit rates
		MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		MPA-128	Solving Real-World Problems Involving Simple Interest
		Throughout	
B.10.b.3	Determine reasonableness of answers.	MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
B.10.a.1	Compare and order real numbers.	HA1-025	Comparing and Ordering Real Numbers
B.10.a.2	Analyze and solve problems using percents.	HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
B.10.a.3	Apply proportional reasoning and ratios in mathematical and real-world contexts.	HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		MPA-079	Unit rates
		MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
GEOMETRY			
C.10.a.1	Identify, describe and analyze properties of 2 and 3 dimensional figures, relationships among figures and relationships among their parts (e.g., parallel, perpendicular and congruent sides, diagonals, various types of angles and triangles, complementary and supplementary angles, sum of angles in a triangle).	HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-893	Constructing Solids from Different Perspectives
		MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-058	Identifying Polygons
		MPA-059	Classifying Triangles and Quadrilaterals
		MPA-072	Identifying 3-D Figures
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
C.10.a.2	Present convincing geometric arguments by means of informal proof, counter-examples or other logical means.	Grade Level Content Under Review	
C.10.a.3	Model problems using the Pythagorean Theorem and right triangle trigonometry.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
		Grade Level Content Under Review	
C.10.b.1	Use proportional reasoning to solve congruence and similarity problems (e.g., scale drawings and similar geometric figures).	MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
C.10.b.2	Use transformations and symmetry to solve problems.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		Grade Level Content Under Review	

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
		Review	
C.10.b.3	Visualize 3-dimensional figures in problem-solving situations.	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-893	Constructing Solids from Different Perspectives
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
C.10.c.1	Use the two-dimensional rectangular coordinate system to describe and characterize properties of geometric figures. Identify and apply symmetry about an axis.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		MPA-120	Applying Dilations in the Coordinate Plane
		Grade Level Content Under Review	
C.10.c.2	Use the two-dimensional rectangular coordinate system and algebraic procedures to describe and characterize geometric properties and relationships (e.g., slope, intercepts, parallelism, and perpendicularity, Pythagorean Theorem, distance formula).	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
		HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane
MEASUREMENT			
D.10.a.1	Identify, describe and use derived attributes to represent and solve problems (e.g., speed, acceleration, density, money conversion.)	HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
		HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		Throughout	
D.10.b.1	Select and use tools with appropriate degree of precision to determine measurements directly.	MPA-130	Developing a Sense of Relative Sizes of Measures
		<i>Future Release Lesson</i>	<i>MPA-134 Distinguishing Between Precision and Accuracy and Use Significant Digits in Computational Problems</i>
D.10.c.1	Determine the perimeter/area of two-dimensional figures.	HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		MPA-055	Finding the Perimeter of a Figure
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
D.10.c.2	Determine the surface area/volume of three-dimensional figures.	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		MPA-073	Finding the Surface Area of Rectangular Prisms
		MPA-074	Finding the Surface Area of Cylinders
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
D.10.c.3	Solve for angles, and segments in similar polygons and arcs in circles.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		Grade Level Content Under Review	
D.10.c.4	Use right-triangle trig functions and the Pythagorean Theorem to solve right-triangle problems.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
		Grade Level Content Under Review	
D.10.c.5	Use formulas in applications (e.g., Distance Formula, simple and compound interest).	HA1-135	Evaluating Formulas

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
		HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
		HA1-175	Solving Literal Equations
		Throughout	
STATISTICS AND PROBABILITY			
E.10.a.1	Organize, display, compare and interpret data in a variety of ways in mathematical and real-world contexts e.g., histograms, line graphs, stem-and-leaf plots, scatter plots, box-and whiskers, bar charts, Venn diagrams, tables, circle graphs.	HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
		HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-545	Making a Frequency Distribution Table
		HA1-555	Computing the Range, Variance, and Standard Deviation of a Set of Data
		HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
		HA1-885	Histograms and the Normal Distribution
		HA1-886	Unions and Intersections of Sets Using Venn Diagrams
		MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
		MPA-093	Choosing Appropriate Scales and Intervals for Data
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-129	Choosing Appropriate Scales and Intervals for Data (an Introduction)
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatter Plots
E.10.a.2	Interpret, analyze and make predictions from organized and displayed data. e.g., measures of central tendency such as mean, median, mode, and, measures of variation such as standard deviation, mean, median, mode, range, dispersion, outliers, line of best fit, percentiles.	HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
		HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-545	Making a Frequency Distribution Table
		HA1-555	Computing the Range, Variance, and Standard Deviation of a Set of Data
		HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
		HA1-885	Histograms and the Normal Distribution
		HA1-965	Determining the Best-Fitting Line
E.10.a.3	Analyze, evaluate and critique methods and conclusions of statistical experiments, e.g., randomness, sampling, techniques, surveys.	MM1-385	Collecting Data
E.10.b.1	Determine the likelihood of occurrence of simple and complex events Ex: Combinations and permutations, fundamental counting principle, experimental versus theoretical probability and independent, dependent and conditional probability.	HA1-879	Applying Counting Techniques to Permutations and Combinations
		HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
		HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
ALGEBRAIC RELATIONSHIPS			
F.10.a.1	Describe, recognize, interpret and translate graphical representations of mathematical and real-world phenomena on coordinate grids, e.g., slope, intercepts, rate of change, linear and non-linear functions, and quadratic, exponential and constant functions.	HA1-370	Graphing Ordered Pairs on a Coordinate Plane
		HA1-375	Identifying Solutions of Equations in Two Variables
		HA1-380	Graphing Linear Equations
		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		HA1-395	Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel

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		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
		HA1-410	Determining an Equation of a Line Given the Coordinates of Two Points
		HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-892	Data Analysis Using the Graphing Calculator
		HA1-950	Graphing Absolute Value Functions
		HA1-955	Analyzing Linear Functions
		HA1-960	Real-World Applications of Linear Functions
		HA1-965	Determining the Best-Fitting Line
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
F.10.a.2	Analyze, generalize and represent patterns of change, e.g., direct and inverse variations, including numerical sequences, patterns to a given term, algebraic expressions and equations.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
		HA1-450	Solving Problems Involving Direct Variation
		HA1-453	Solving Problems Involving Inverse Variation
		HA1-858	Finding Inverse Relations and Determining if They are Functions
F.10.b.1	Solve linear and quadratic equations, linear inequalities and systems of linear equations and inequalities.	HA1-115	Using the Addition and Subtraction Properties for Equations
		HA1-120	Using the Multiplication and Division Properties for Equations
		HA1-125	Solving Equations Using More Than One Property
		HA1-140	Solving Equations by Combining Like Terms
		HA1-145	Solving Equations with Variables on Both Sides
		HA1-180	Graphing Equations and Inequalities on the Number Line
		HA1-185	Solving Inequalities Using the Addition and Subtraction Properties
		HA1-190	Solving Inequalities Using the Multiplication and Division Properties
		HA1-195	Solving Inequalities Using More Than One Property
		HA1-305	Solving Polynomial Equations by Factoring
		HA1-310	The Practical Use of Polynomial Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method
		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-475	Graphing the Solution Set of a System of Linear Inequalities
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-805	Applying Algebra Concepts
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
F.10.b.2	Model and solve a variety of mathematical and real-world problems by using algebraic expressions, equations and inequalities, e.g., linear, exponential, quadratic.	Throughout	
F.10.b.3	Translate between different representations and describe the relationship among variable quantities in a problem, e.g., tables, graphs, functional notations, formulas.	HA1-135	Evaluating Formulas

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		HA1-175	Solving Literal Equations
		HA1-380	Graphing Linear Equations
		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		HA1-395	Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel
		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
		HA1-410	Determining an Equation of a Line Given the Coordinates of Two Points
		HA1-415	Graphing Linear Inequalities with Two Variables
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
		HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
		Throughout	
F.10.c.1	Demonstrate understanding of properties by evaluating and simplifying expressions.	HA1-005	Evaluating Algebraic Expressions
		HA1-060	Evaluating Expressions Using the Order of Operations
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-070	Evaluating Formulas for Given Values of the Variables
		HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
		HA1-076	Basic Distributive Property
		HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-095	Translating Word Phrases into Algebraic Expressions
		HA1-135	Evaluating Formulas
F.10.c.2	Demonstrate understanding of properties by solving linear and quadratic equations, linear inequalities, and systems of linear equations and inequalities with one or two variables.	HA1-120	Using the Multiplication and Division Properties for Equations
		HA1-125	Solving Equations Using More Than One Property
		HA1-140	Solving Equations by Combining Like Terms
		HA1-145	Solving Equations with Variables on Both Sides
		HA1-180	Graphing Equations and Inequalities on the Number Line
		HA1-185	Solving Inequalities Using the Addition and Subtraction Properties
		HA1-190	Solving Inequalities Using the Multiplication and Division Properties
		HA1-195	Solving Inequalities Using More Than One Property
		HA1-305	Solving Polynomial Equations by Factoring
		HA1-310	The Practical Use of Polynomial Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method
		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-475	Graphing the Solution Set of a System of Linear Inequalities
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-805	Applying Algebra Concepts

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
		Throughout	

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Wisconsin WKCE-CRT Mathematics Framework document adopted by the Wisconsin Department of Public Instruction on January, 2005.