



8th Grade Correlation to Mathematics Grade Level Expectations

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
NUMBER AND NUMBER RELATIONS			
1.	Compare rational numbers using symbols (i.e., $<$, \leq , $=$, \geq , $>$) and position on a number line (N-1-M) (N-2-M)	MPA-016	Compare and order decimals
		MPA-031	Compare and order fractions and decimals
		MPA-045	Compare and order integers
		HA1-025	Comparing and Ordering Real Numbers (<i>on a Number Line</i>)
2.	Use whole number exponents (0-3) in problem-solving contexts (N-1-M) (N-5-M)	MPA-013	Use powers and exponents in expressions
		HA1-860	Using the Laws of Exponents
3.	Estimate the answer to an operation involving rational numbers based on the original numbers (N-2-M) (N-6-M)	MPA-033	Estimate computations with fractions and mixed numbers
4.	Read and write numbers in scientific notation with positive exponents (N-3-M)	MPA-021	Convert between standard and scientific notation
5.	Simplify expressions involving operations on integers, grouping symbols, and whole number exponents using order of operations (N-4-M)	MPA-008	Determine the correct order of operations when multiple operations are performed
6.	Identify missing information or suggest a strategy for solving a real-life, rational-number problem (N-5-M)	MPA-116	Solve real-life problems by using guess and check and working backwards
		MPA-003	Use four-step plan for problem solving
		MM1-195	Identifying the Mathematical Question Given in a Word Problem
7.	Use proportional reasoning to model and solve real-life problems (N-8-M)	MPA-080	Solve proportions
		MPA-110	Solve problems using proportions, scale drawings, models and maps
8.	Solve real-life problems involving percentages, including percentages less than 1 or greater than 100 (N-8-M) (N-5-M)	MPA-081	Convert decimals, fractions, and percents I
		MPA-082	Convert decimals, fractions, and percents II
		MPA-083	Finding Number Given Percent and Total
		MPA-084	Finding Percent Given Number and Total
		MPA-085	Finding Total Given Number and Percent
		MPA-086	Solving Problems Using Percents
		MPA-087	Finding Percent Increase and Decrease
		MPA-088	Solving Real-World Problems Involving Percent
		MPA-126	Solving Real-World Problems Involving Sales Tax
		MPA-127	Solving Real-World Problems Involving Discounts
		MPA-128	Solving Real-World Problems Involving Simple Interest
9.	Find unit/cost rates and apply them in real-life problems (N-8-M) (N-5-M) (A-5-M)	MPA-079	Determine unit rates
ALGEBRA			
10.	Write real-life meanings of expressions and equations involving rational numbers and variables (A-1-M) (A-5-M)	MPA-041	Write simple algebraic expressions from phrases

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
11.	Translate real-life situations that can be modeled by linear or exponential relationships to algebraic expressions, equations, and inequalities (A-1-M) (A-4-M) (A-5-M)	HA1-104 MPA-125	Translating Word Statements into Equations Formulate a possible problem situation given an equation
12.	Solve and graph solutions of multi-step linear equations and inequalities (A-2-M)	HA1-105 MPA-109	Translating Word Statements into Inequalities Solving and graphing inequalities
13.	Switch between functions represented as tables, equations, graphs, and verbal representations, with and without technology (A-3-M) (P-2-M) (A-4-M)	HA1-105 HA1-436	Translating Word Statements into Inequalities Identifying relations
14.	Construct a table of x- and y-values satisfying a linear equation and construct a graph of the line on the coordinate plane (A-3-M) (A-2-M)	HA1-437	Identifying relations as functions
15.	Describe and compare situations with constant or varying rates of change (A-4-M)	HA1-398	Graphing linear equations using slope and the y-intercept or slope and a point
16.	Explain and formulate generalizations about how a change in one variable results in a change in another variable (A-4-M)	HA1-401 HA1-437	How variations of "m" and "b" affect the graph of $y = mx + b$ Identifying relations as functions
MEASUREMENT			
17.	Determine the volume and surface area of prisms and cylinders (M-1-M) (G-7-M)	MPA-075	Find the volume of rectangular prisms
		MPA-076	Find the volume of cylinders
		MPA-115	Find the volumes of prisms, cylinders, pyramids, and cones using models
		MPA-073	Find the surface area of rectangular prisms
		MPA-074	Find the surface area of cylinders
18.	Apply rate of change in real-life problems, including density, velocity, and international monetary conversions (M-1-M) (N-8-M) (M-6-M)	<i>Lesson in Development</i>	
19.	Demonstrate an intuitive sense of the relative sizes of common units of volume in relation to real-life applications and use this sense when estimating (M-2-M) (G-1-M)	MPA-130	Developing a Sense of Relative Sizes of Measures
20.	Identify and select appropriate units for measuring volume (M-3-M)	MPA-062	Convert units in customary system
21.	Compare and estimate measurements of volume and capacity within and between the U.S. and metric systems (M-4-M) (G-1-M)	MPA-062	Convert units in customary system
		MPA-061	Convert units in metric system
		MPA-063	Convert units in customary system
22.	Convert units of volume/capacity within systems for U.S. and metric units (M-5-M)	MPA-062	Convert units in customary system
		MPA-061	Convert units in metric system
		MPA-063	Convert units in customary system
GEOMETRY			
23.	Define and apply the terms measure, distance, midpoint, bisect, bisector, and perpendicular bisector (G-2-M)	<i>Lesson in Development</i>	
24.	Demonstrate conceptual and practical understanding of symmetry, similarity, and congruence and identify similar and congruent figures (G-2-M)	MPA-121	Compare similar and congruent polygons using proportions
25.	Predict, draw, and discuss the resulting changes in lengths, orientation, angle measures, and coordinates when figures are translated, reflected across horizontal or vertical lines, and rotated on a grid (G-3-M) (G-6-M)	MPA-108	Graphing translations and reflections on the Coordinate plane
26.	Predict, draw, and discuss the resulting changes in lengths, orientation, and angle measures that occur in figures under a similarity transformation (dilation) (G-3-M) (G-6-M)	MPA-120	Apply dilations in the Coordinate plane
27.	Construct polyhedra using 2-dimensional patterns (nets) (G-4-M)	MPA-106	Identify a solid figure from a net

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
28.	Apply concepts, properties, and relationships of adjacent, corresponding, vertical, alternate interior, complementary, and supplementary angles (G-5-M)	MPA-056	Classify angles
		MPA-057	Identify and apply supplementary and complementary angles
29.	Solve problems involving lengths of sides of similar triangles (G-5-M) (A-5-M)	MPA-121	Compare similar and congruent polygons using proportions
30.	Construct, interpret, and use scale drawings in real-life situations (G-5-M) (M-6-M) (N-8-M)	MPA-110	Solve problems using proportions, scale drawings, models and maps
31.	Use area to justify the Pythagorean theorem and apply the Pythagorean theorem and its converse in real-life problems (G-5-M) (G-7-M)	HA1-515	Using the Pythagorean theorem
		HA1-516	Applications of the Pythagorean theorem
32.	Model and explain the relationship between the dimensions of a rectangular prism and its volume (i.e., how scale change in linear dimension(s) affects volume) (G-5-M)	MPA-111	Comparing perimeters, areas and volumes of similar geometric figures and solids
		MPA-115	Find the volumes of prisms, cylinders, pyramids, and cones using models
33.	Graph solutions to real-life problems on the coordinate plane (G-6-M)	MPA-046	Graphing Points on the Coordinate Plane
DATA ANALYSIS, PROBABILITY AND DISCRETE MATH			
34.	Determine what kind of data display is appropriate for a given situation (D-1-M)	MPA-092	Read and interpret bar, line, and circle graphs
35.	Match a data set or graph to a described situation, and vice versa (D-1-M)	MPA-129	Choose appropriate scales and intervals for a frequency table
36.	Organize and display data using circle graphs (D-1-M)	MPA-092	Read and interpret bar, line, and circle graphs
37.	Collect and organize data using box-and-whisker plots and use the plots to interpret quartiles and range (D-1-M) (D-2-M)	MPA-097	Construct box-and-whiskers plots
38.	Sketch and interpret a trend line (i.e., line of best fit) on a scatterplot (D-2-M) (A-4-M) (A-5-M)	MPA-132	Interpreting and Creating Scatterplots
39.	Analyze and make predictions from discovered data patterns (D-2-M)	MPA-132	Interpreting and Creating Scatterplots
40.	Explain factors in a data set that would affect measures of central tendency (e.g., impact of extreme values) and discuss which measure is most appropriate for a given situation (D-2-M)	HA1-540	Finding the mean, median, and mode from data and frequency distribution tables
		HA1-541	Applications of the Pythagorean theorem
41.	Select random samples that are representative of the population, including sampling with and without replacement, and explain the effect of sampling on bias (D-2-M) (D-4-M)	<i>Lesson in Development</i>	
42.	Use lists, tree diagrams, and tables to apply the concept of permutations to represent an ordering with and without replacement (D-4-M)	MPA-089	Use tree diagrams
		MPA-091	Calculate the number of combinations of a set of objects
43.	Use lists and tables to apply the concept of combinations to represent the number of possible ways a set of objects can be selected from a group (D-4-M)	MPA-091	Calculate the number of combinations of a set of objects
44.	Use experimental data presented in tables and graphs to make outcome predictions of independent events (D-5-M)	MPA-090	Find the probability of simple real-life events
		MPA-112	Construct sample spaces for compound events
45.	Calculate, illustrate, and apply single- and multiple-event probabilities, including mutually exclusive, independent events and non-mutually exclusive, dependent events (D-5-M)	MPA-112	Construct sample spaces for compound events
		MPA-113	Find the probability of compound events through experimentation
		MPA-114	Find the odds of events and experimental probability from a math model
PATTERNS, RELATIONS AND FUNCTIONS			
46.	Distinguish between and explain when real-life numerical patterns are linear/arithmetic (i.e., grows by addition) or exponential/geometric (i.e., grows by multiplication) (P-1-M) (P-4-M)	HA1-447	Identifying Number Patterns

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
47.	Represent the n^{th} term in a pattern as a formula and test the representation (P-1-M) (P-2-M) (P-3-M) (A-5-M)	HA1-448	Finding the n^{th} Term of a Pattern
48.	Illustrate patterns of change in dimension(s) and corresponding changes in volumes of rectangular solids (P-3-M)	MPA-111	Comparing perimeters, areas and volumes of similar geometric figures and solids
		MPA-115	Find the volumes of prisms, cylinders, pyramids, and cones using models

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Louisiana Grade Level Expectations for Grade 8 document adopted by the Louisiana State Board of Education.