

Cord Bridges to Algebra and Geometry, 3rd edition
correlation to West Virginia Grade 8 Content Standards and Objectives

Indicators	Cord Bridges Lesson(s)
<p>Standard 1 M.S.8.1: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will</p> <ul style="list-style-type: none"> • demonstrate understanding of numbers, ways of representing numbers, and relationships among numbers and number systems, • demonstrate meanings of operations and how they relate to one another, and • compute fluently and make reasonable estimates. 	
<p>M.O.8.1.1 analyze, describe and compare the characteristics of rational and irrational numbers.</p>	8.5
<p>M.O.8.1.2 analyze and solve application problems with</p> <ul style="list-style-type: none"> • powers, • squares, • square roots, • scientific notation, and <p>verify solutions using estimation techniques.</p>	8.1, 8.2, 8.3, 8.4, 8.5
<p>M.O.8.1.3 analyze and solve grade-appropriate real-world problems with</p> <ul style="list-style-type: none"> • whole numbers, • decimals, • fractions, • percents, percent increase and decrease, • integers, and <p>including, but not limited to, rates, tips, discounts, sales tax and interest and verify solutions using estimation techniques.</p>	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 3.1, 3.2, 3.3, 3.4, 3.5, 5.2, 5.3, 5.4, 5.5, 5.6, 7.1, 7.2, 7.3, 7.4, 7.5

<p>Standard 2 M.S.8.2: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will</p> <ul style="list-style-type: none"> • demonstrate understanding of patterns, relations and functions, • represent and analyze mathematical situations and structures using algebraic symbols, • use mathematical models to represent and understand quantitative relationships, and • analyze change in various contexts. 	
<p>M.O.8.2.1 use a variety of strategies to solve one and two-step linear equations and inequalities with rational solutions; defend the selection of the strategy; graph the solutions and justify the reasonableness of the solution..</p>	4.1, 4.2, 4.3, 4.4, 4.5, 5.7, 5.8
<p>M.O.8.2.2 identify proportional relationships in real-world situations, then find and select an appropriate method to determine the solution; justify the reasonableness of the solution.</p>	6.1, 6.2, 6.3, 6.4
<p>M.O.8.2.3 add and subtract polynomials limited to two variables and positive exponents.</p>	4.4
<p>M.O.8.2.4 use systems of linear equations to analyze situations and solve problems.</p>	9.5
<p>M.O.8.2.5 apply inductive and deductive reasoning to write a rule from data in an input/output table, analyze the table and the rule to determine if a functional relationship exists.</p>	1.9, 9.2, 9.3, 9.4, 9.7
<p>M.O.8.2.6 graph linear equations and inequalities within the Cartesian coordinate plane by generating a table of values (with and without technology).</p>	9.2
<p>M.O.8.2.7 formulate and apply a rule to generate an arithmetic, geometric and algebraic pattern.</p>	1.9
<p>M.O.8.2.8 determine the slope of a line using a variety of methods including</p> <ul style="list-style-type: none"> • graphing • change in y over change in x • equation 	9.3
<p>M.O.8.2.9 represent and solve real-world grade-appropriate problems using multiple strategies and justify solutions</p>	Used throughout the textbook

<p>M.O.8.2.10 identify a real life problem involving change over time; make a hypothesis as to the outcome; develop, justify, and implement a method to collect, organize, and analyze data; generalize the results to make a conclusion; compare the hypothesis and the results of the investigation; present the project using words, graphs, drawings, models, or tables.</p>	<p>9.2, 9.3, 9.4, 9.7</p>
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<p>Standard 3 M.S.8.3: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will:</p> <ul style="list-style-type: none"> • analyze characteristics and properties of two- and three- dimensional geometric shapes and develop mathematical arguments about geometric relationships, • specify locations and describe spatial relationships using coordinate geometry and other representational systems, • apply transformation and use symmetry to analyze mathematical situations, and • solve problems using visualization, spatial reasoning, and geometric modeling. 	
<p>M.O.8.3.1 justify the relationships among corresponding, alternate interior, alternate exterior and vertical angles when parallel lines are cut by a transversal using models, pencil/paper, graphing calculator, and technology.</p>	10.3
<p>M.O.8.3.2 classify polyhedrons according to the number and shape of faces; use inductive reasoning to determine the relationship between vertices, faces and edges (edges + 2 = faces + vertices).</p>	12.1, 12.2, 12.3
<p>M.O.8.3.3 identify, apply, and construct perpendicular and angle bisectors with and without technology) given a real-world situation.</p>	Chapter 10 Math Lab Activity 2 (pp. 591-594)
<p>M.O.8.3.4 create geometric patterns including tiling, art design, tessellations and scaling using transformations (rotations, reflections, translations) and predict results of combining, subdividing, and changing shapes of plane figures and solids.</p>	10.7, 10.8, 10.9, Chapter 10 Math Lab Activity 3 (pp. 594-595)
<p>M.O.8.3.5 create scale models of similar figures using ratio, proportion with pencil/paper and technology and determine scale factor.</p>	11.1, 11.2, 11.3
<p>M.O.8.3.6 make and test a conjecture concerning</p> <ul style="list-style-type: none"> • regular polygons, • the cross section of a solid such as a cylinder, cone, and pyramid, • the intersection of two or more geometric figures in the plane (e.g., intersection of a circle and a line), and <p>justify the results.</p>	10.5, 12.1

<p>Standard 4 M.S.8.4: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will</p> <ul style="list-style-type: none"> • demonstrate understanding of measurable attributes of objects and the units, systems, and processes of measurements, and • apply appropriate techniques, tools, and formulas to determine measurements. 	
<p>M.O.8.4.1 select and apply an appropriate method to solve; justify the method and the reasonableness of the solution of problems involving volume of</p> <ul style="list-style-type: none"> • prisms • cylinders • cones • pyramids • spheres <p>given real-world problem solving situations.</p>	12.4, 12.5
<p>M.O.8.4.2 solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models or definitions.</p>	10.4, 10.5, 11.1, 11.3, 11.5, 11.6, 11.7, 12.2, 12.3, 12.4, 12.5, 12.6
<p>M.O.8.4.3 solve right triangle problems where the existence of triangles is not obvious using the Pythagorean Theorem and indirect measurement in real-world problem solving situations.</p>	8.6 (Pythagorean Theorem), 11.1 (Indirect Measurement)

<p>Standard 5 M.S.8.5: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will:</p> <ul style="list-style-type: none"> • formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them, • select and use appropriate statistical methods to analyze data, • develop and evaluate inferences and predictions that are based on models, and • apply and demonstrate an understanding of basic concepts of probability. 	
<p>M.O.8.5.1 determine and explain whether a real-world situation involves permutations or combinations, then use appropriate technology to solve the problem.</p>	not covered
<p>M.O.8.5.2 compare the experimental and theoretical probability of a given situation (including compound probability of a dependent and independent event).</p>	6.8
<p>M.O.8.5.3 create and extrapolate information from multiple-bar graphs, box and whisker plots, and other data displays using appropriate technology.</p>	2.2, 2.3, 2.4, 2.5, 2.6, 2.7
<p>M.O.8.5.4 analyze problem situations, games of chance, and consumer applications using random and non-random samplings to determine probability, make predictions, and identify sources of bias.</p>	6.8
<p>M.O.8.5.5 draw inferences, make conjectures and construct convincing arguments involving</p> <ul style="list-style-type: none"> • different effects that changes in data values have on measures of central tendency • misuses of statistical or numeric information, based on data analysis of same and different sets of data. 	2.1, 2.7