Cord Algebra 1, Mathematics in Context, 3rd edition
correlation to West Virginia Algebra 1 Content Standards and Objectives

Indicators	**Cord Algebra 1 Lesson(s)**
Standard M.S.A1.2: Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will • 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.	
M.O.A1.2.1 formulate algebraic expressions for use in equations and inequalities that require planning to accurately model real-world problems.	1.8, 1.9, 3.1, 3.2, 3.3, 3.4, 3.5
M.O.A1.2.2 create and solve multi-step linear equations, absolute value equations, and linear inequalities in one variable, (with and without technology); apply skills toward solving practical problems such as distance, mixtures or motion and judge the reasonableness of solutions.	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 9.1, 9.2, 9.3, 9.4
M.O.A1.2.3 evaluate data provided, given a real-world situation, select an appropriate literal equation and solve for a needed variable.	3.4
M.O.A1.2.4 develop and test hypotheses to derive the laws of exponents and use them to perform operations on expressions with integral exponents.	10.2, 10.3
M.O.A1.2.5 analyze a given set of data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns and make inferences and predictions based on observing the pattern.	1.2
M.O.A1.2.6 determine the slope of a line through a variety of strategies (e.g. given an equation or graph).	4.2, 4.3, 4.4, 4.5, 4.6
M.O.A1.2.7 analyze situations and solve problems by determining the equation of a line given a graph of a line, two points on the line, the slope and a point, or the slope and y intercept.	4.3, 4.4, 4.5, 4.6

M.O.A1.2.8 identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).	4.3, 4.4, 4.5, 4.6, 4.7, Chapter 4 Math Applications (pp. 256-265)
M.O.A1.2.9 create and solve systems of linear equations graphically and numerically using the elimination method and the substitution method, given a real-world situation.	8.1, 8.2, 8.3, 8.4, 8.5, Chapter 8 Math Applications (pp. 480-489)
M.O.A1.2.10 simplify and evaluate algebraic expressions • add and subtract polynomials • multiply and divide binomials by binomials or monomials	10.1, 10.2, 10.3, 10.4
M.O.A1.2.11 create polynomials to represent and solve problems from real-world situations while focusing on symbolic and graphical patterns.	10.1
M.O.A1.2.12 use area models and graphical representations to develop and explain appropriate methods of factoring.	10.5, 10.6, 10.7, Chapter 10 Math Lab Activity 3 (pp. 602-603)
M.O.A1.2.13 simplify radical expressions • through adding, subtracting, multiplying and dividing • exact and approximate forms	13.3
M.O.A1.2.14 choose the most efficient method to solve quadratic equations by • graphing (with and without technology), • factoring • quadratic formula and draw reasonable conclusions about a situation being modeled.	11.1, 11.2, 11.3, 11.4, 11.5, 11.6
M.O.A1.2.15 describe real life situations involving exponential growth and decay equations including $y = 2^x$ and $y = (½)^x$; compare the equation with attributes of an associated table and graph to demonstrate an understanding of their interrelationship.	5.6

M.O.A1.2.16 simplify and evaluate rational expressions • add, subtract, multiply and divide • determine when an expression is undefined.	12.1, 12.2, 12.3, 12.4
M.O.A1.2.17 perform a linear regression (with and without technology), • compare and evaluate methods of fitting lines to data. • identify the equation for the line of regression, • examine the correlation coefficient to determine how well the line fits the data • use the equation to predict specific values of a variable.	7.3
M.O.A1.2.18 compute and interpret the expected value of random variables in simple cases using simulations and rules of probability (with and without technology).	6.2
M.O.A1.2.19 gather data to create histograms, box plots, scatter plots and normal distribution curves and use them to draw and support conclusions about the data.	7.2, 7.3, 7.4, 7.5, 7.6
M.O.A1.2.20 design experiments to model and solve problems using the concepts of sample space and probability distribution.	6.2, 6.3, 6.4
M.O.A1.2.21 use multiple representations, such as words, graphs, tables of values and equations, to solve practical problems; describe advantages and disadvantages of the use of each representation.	Used throughout the textbook, especially in Chapters 3, 4, and 5 and in all chapters of Math Applications