Cord Algebra 1, Learning in Context, 3rd edition
correlation to North Carolina High School Math Level A Essential Standards

Essential Standard	**Cord Algebra 1 Lesson(s)**
N.A.1 **Apply ratios and rates to solve problems.**	
N.A.1.a Solve problems involving indirect measures.	2.2, 3.2
N.A.1.b Select appropriate units.	2.2, 3.2
N.A.1.c Conduct unit analysis.	2.2, 3.2
N.A.2 **Apply properties of exponents.**	
N.A.2.a Apply and justify the basic properties of exponents using numerals, expressions, and algebraic equations.	10.2, 10.3
N.A.2.b Find integer powers of rational numbers.	10.3
N.A.2.c Understand and operate with square roots and cube roots.	5.5, 13.3, 13.6
A.A.1 **Use appropriate properties and strategies to combine and factor algebraic expressions.**	
A.A.1.a Add, subtract, multiply, and divide algebraic expressions (division by monomials only).	13.3
A.A.1.b Combine algebraic expressions using associative, commutative, and distributive properties.	3.1, 3.3, 3.4
A.A.1.c Factor simple quadratic expressions (of the form $ax^2 + bx + c$, where a =1 that factor over the integers) • monomial terms (gcf) • perfect-square trinomials • difference of squares	10.5, 10.6, 10.7
A.A.2 **Use literal equations to solve problems involving direct and inverse variation.**	
A.A.2.a Use substitution strategies to solve literal equations involving direct and inverse variation.	5.3
A.A.2.b Explain the solutions in terms of unit analysis and describe the effect change will have on any variable.	3.2

A.A.3 D**escribe patterns of change.**	
A.A.3.a Compare linear versus nonlinear patterns of change to include quadratic and exponential patterns of change.	5.3, 5.4, 5.5
A.A.3.b Determine intervals of increase or decrease and describe the rate of increase or decrease.	4.2, 4.3, 4.4, 4.5, 5.3, 5.4, 5.5, 5.6
A.A.4 **Represent and interpret functions based on mathematical and real-world phenomena.**	
A.A.4.a Distinguish which relations are functions.	5.1
A.A.4.b Use appropriate terminology (including domain, range, and intercepts) and notation associated with functions.	5.1, 5.2, 5.3, 5.4, 5.5, 5.6
A.A.4.c Interpret the relationship of constants and coefficients to graphs, tables, equations, and in context.	4.2, 4.3, 4.4, 4.5
A.A.4.d Write and translate among equivalent forms of linear functions.	4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 5.3, 5.4, 5.5, 5.6
A.A.4.e Solve linear equations using graphs, tables, and symbols.	4.2, 4.3, 4.4, 4.5, 4.6, 4.7
A.A.4.f Solve exponential equations using tables.	5.6
A.A.5 **Represent and solve linear and exponential relationships in context.**	
A.A.5.a Solve systems of linear equations in two variables, graphically and symbolically.	8.1, 8.2, 8.3, 8.4, 8.5
A.A.5.b Solve pairs of linear inequalities in two variables with tables and graphs.	9.6, 9.7
G.A.1 **Analyze geometric shapes in terms of other geometric terms and justify their relationships.**	
G.A.1.a Represent and use vertices of simple geometric figures as coordinates in a plane.	4.1
G.A.1.b Calculate the slope, distance between points, coordinates of the midpoints, and the distance from a point to a line.	4.1, 4.2
G.A.1.c Use points, lines, and planes as undefined terms to define other geometric terms such as line segments, angles, and rays.	Covered in *CORD Geometry* Lesson 1.1
G.A.1.d Analyze intersections among two and three planes in space.	Covered in *CORD Geometry* Lesson 7.3 and Activity 3 pp. 435-437

G.A.1.e Identify and relate properties of geometric shapes.	Covered in *CORD Geometry* Lessons 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, Activities 2 & 3 pp. 367-369
G.A.2 **Apply formulas and conceptual strategies to solve problems involving area and volume.**	
G.A.2.a Identify and define radius, diameter, chord, tangent, secant, and circumference.	2.4
G.A.2.b Apply formulas and solve problems involving the areas of circles, triangles, quadrilaterals (including decomposition into rectangles and triangles) and regular polygons.	2.4, Math Applications pp. 127-133
G.A.2.c Identify and apply the 3:1 relationship among volumes of circular cylinders and cones with the same height and circular base and 3:1 relationship between the volume of a prism and pyramid with the same base area and height.	Covered in *CORD Geometry* Lessons 10.4, 10.6
G.A.2.d Apply formulas and solve problems involving volume of right prisms, right pyramids, right circular cylinders, and right circular cones.	2.5, Math Applications pp. 127-133
G.A.2.e Determine the arc lengths and areas of sectors of circles.	Covered in *CORD Geometry* Lesson 9.3
G.A.2.f Determine the areas of regular polygons and the sums of the interior and exterior angles.	Covered in *CORD Geometry* Lessons 6.1, 6.2, 8.4
G.A.2.g Link the surface area of prisms, cylinders, and pyramids to the sum of the area(s) of their base(s) and lateral surfaces using planar nets to illustrate and sum the relevant measures.	2.5
D.A.1 **Understand the role that vertex-edge graphs play in optimization and avoidance of conflict.**	
D.A.1.a Explore the properties of vertex-edge graphs.	Not Covered
D.A.1.b Use vertex-edge graphs and algorithmic thinking to model and solve problems involving paths, networks, and relationships with finite elements.	Not Covered
D.A.1.c Use mathematical models to represent and solve problems finding efficient routes, Euler Circuits, vertex coloring, and avoiding conflict.	Not Covered

S.A.1 **Analyze statistical distributions in terms of the relationships among shape, center, spread, and outliers.**	
S.A.1.a Determine the effect of an outlier on the mean, median, mode, and range of a set of data including various graphical displays.	7.1, 7.4, 7.5
S.A.1.b Compare shape, center, and spread of univariate data using graphical displays, quartiles, percentiles, outliers, means, and standard deviations.	7.5
S.A.2 **Evaluate trends with bivariate data.**	
S.A.2.a Use informal strategies for placement of lines of best fit such as median-median and quartile points fit.	7.3
S.A.2.b Model trends in bivariate data displayed in scatter plots, using informal strategies to evaluate goodness of fit to linear models.	7.3