

Arkansas Mathematics Curriculum Framework, Algebra I, Correlated to *Cord Algebra*

| Standards and Student Learner Expectations | | Student Edition Lesson(s) |
|--|---|--|
| Strand Language of Algebra | | |
| Content Standard 1. <i>Students will develop the language of algebra including specialized vocabulary, symbols, and operations.</i> | | |
| LA.1.AI.1 | Evaluate <i>algebraic expressions</i> , including radicals, by applying the order of operations | 2.1, 10.3, 10.4 |
| LA.1.AI.2 | Translate word phrases and sentences into <i>expressions, equations, and inequalities</i> , and vice versa | 2.1, 2.2, 2.Aps, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.Labs, 3.Aps, 9.1, 9.2, 9.3, 9.4, 9.5, 9.Labs, 9.Aps |
| LA.1.AI.3 | Apply the laws of (integral) <i>exponents</i> | 10.3, 10.4 |
| LA.1.AI.4 | Solve problems involving <i>scientific notation</i> | 1.7 |
| LA.1.AI.5 | Perform <i>polynomial</i> operations (addition, subtraction, multiplication) with and without manipulatives | 10.1, 10.3, 10.4 |
| LA.1.AI.6 | Simplify <i>algebraic fractions</i> by <i>factoring</i> | 10.5, 10.7, 10.8 |
| LA.1.AI.7 | Recognize when an expression is undefined | 12.3 |
| LA.1.AI.8 | Simplify <i>radical expressions</i> such as $\frac{3}{\sqrt{7}}$ | 12.3 |
| LA.1.AI.9 | Add, subtract, and multiply simple radical expressions like $3\sqrt{20} + 7\sqrt{5}$ and $4\sqrt{5} * 2\sqrt{3}$ | 12.3, 12.6 |
| Strand Solving Equation and Inequalities | | |
| Content Standard 2. <i>Students will write, with and without appropriate technology equivalent forms of equations, inequalities, and systems of equations and solve with fluency.</i> | | |
| SEI.2.AI.1 | Solve multi-step equations and inequalities with rational <i>coefficients</i> <ul style="list-style-type: none"> • numerically (from a table or guess and check) • algebraically (including the use of manipulatives) • graphically • technologically | 3.4, 3.5, 3.Aps, 9.3, 9.4, 9.Aps |
| SEI.2.AI.2 | Solve systems of two linear equations <ul style="list-style-type: none"> • numerically (from a table or guess and check) • algebraically (including the use of manipulatives) • graphically • technologically | 8.1, 8.2, 8.3, 8.4, 8.5, 8.Labs, 8.Aps |
| SEI.2.AI.3 | Solve linear <i>formulas</i> and <i>literal equations</i> for a specified <i>variable</i> (Ex. Solve for p in $I = prt$.) | Formulas used in 2.2, 2.3, 2.4, 2.5, 2.6, 2.Aps, Variables solved from in Chapter 3 |
| SEI.2.AI.4 | Solve and graph simple <i>absolute value equations</i> and <i>inequalities</i> Ex. $ x = 5$, $ x \leq 5$, $ x > 5$ | 3.6, 9.7 |
| SEI.2.AI.5 | Solve real world problems that involve a combination of rates, <i>proportions</i> and percents | 3.2, 3.Aps |
| SEI.2.AI.6 | Solve problems involving <i>direct variation</i> and indirect (<i>inverse</i>) <i>variation</i> to model rates of change | 5.3, 5.4, 5.5, 5.6 |
| SEI.2.AI.7 | Use coordinate geometry to represent and/or solve problems (midpoint, length of a line segment, and <i>Pythagorean Theorem</i>) | 12.2 |

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| SEI.2.AI.8 | Communicate real world problems graphically, algebraically, numerically and verbally | Used throughout the text, specifically in Math Applications |
| Strand Linear Functions | | |
| Content Standard 3. <i>Students will analyze functions by investigating rates of change, intercepts, and zeros.</i> | | |
| LF.3.AI.1 | Distinguish between <i>functions</i> and non-functions/ <i>relations</i> by inspecting graphs, ordered pairs, <i>mapping diagrams</i> and/or <i>tables</i> of data | 5.1, 5.4 |
| LF.3.AI.2 | Determine <i>domain</i> and <i>range</i> of a relation from an algebraic expression, graphs, set of ordered pairs, or table of data | 5.1 |
| LF.3.AI.3 | Know and/or use <i>function notation</i> , including evaluating functions for given values in their domain | 5.1, 5.2 |
| LF.3.AI.4 | Identify <i>independent variables</i> and <i>dependent variables</i> in various representational modes: words, symbols, and/or graphs | 4.6, 5.1 |
| LF.3.AI.5 | Interpret the rate of change/ <i>slope</i> and intercepts within the context of everyday life (Ex. telephone charges based on base rate (<i>y-intercept</i>) plus rate per minute (<i>slope</i>)) | 4.3, 4.5, 4.6, 4.Aps |
| LF.3.AI.6 | Calculate the slope given <ul style="list-style-type: none"> • two points • the graph of a line • the equation of a line | 4.3, 4.4, 4.5, 4.7, 4.Aps |
| LF.3.AI.7 | Determine by using slope whether a pair of lines are parallel, perpendicular, or neither | 4.7 |
| LF.3.AI.8 | Write an equation in <i>slope-intercept</i> form given <ul style="list-style-type: none"> • two points • a point and y-intercept • <i>x-intercept</i> and y-intercept • a point and slope • a table of data • the graph of a line | 4.5, 4.6, 4.7, 4.Aps |
| LF.3.AI.9 | Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa | 4.3, 4.4, 4.5, 4.6, 4.7, 4.Aps |

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| Strand Non-linear Functions | | |
| Content Standard 4. <i>Students will compare the properties in the family of functions.</i> | | |
| NLF.4.AI.1 | Factoring polynomials <ul style="list-style-type: none"> • greatest common factor • <i>binomials</i> (difference of squares) • <i>trinomials</i> | 10.2, 10.3, 10.7, 10.8 |
| NLF.4.AI.2 | Determine <i>minimum, maximum, vertex, and zeros</i> , given the graph | 11.1, 11.2, 11.5, 11.Aps |
| NLF.4.AI.3 | Solve <i>quadratic equations</i> using the appropriate methods with and without technology <ul style="list-style-type: none"> • <i>factoring</i> • <i>quadratic formula</i> with real number solutions | 11.3, 11.4, 11.5, 11.6, 11.Aps |
| NLF.4.AI.4 | Recognize function families and their connections including <i>vertical shift</i> and <i>reflection</i> over the <i>x-axis</i> <ul style="list-style-type: none"> • quadratics • <i>absolute value</i> • <i>exponential functions</i> | 5.4, 5.5, 5.6, 11.1, 11.2 |
| NLF.4.AI.5 | Communicate real world problems graphically, algebraically, numerically and verbally | Used throughout the text, specifically in Math Applications |
| Strand Data Interpretation and Probability | | |
| Content Standard 5. <i>Students will compare various methods of reporting data to make inferences or predictions.</i> | | |
| DIP.5.AI.1 | Construct and use <i>scatter plots</i> and <i>line of best fit</i> to make <i>inferences</i> in real life situations | 7.3 |
| DIP.5.AI.2 | Use simple <i>matrices</i> in addition, subtraction, and <i>scalar multiplication</i> | 1.6 |
| DIP.5.AI.3 | Construct simple matrices for real life situations | 1.6 |
| DIP.5.AI.4 | Determine the effects of changes in the data set on the measures of <i>central tendency</i> | 7.1 |
| DIP.5.AI.5 | Use two or more <i>box-and-whisker plots</i> to compare <i>data sets</i> | 7.5 |
| DIP.5.AI.6 | Construct and interpret a cumulative frequency <i>histogram</i> in real life situations | 7.2 |
| DIP.5.AI.7 | Recognize <i>linear functions</i> and non-linear functions by using a table or a graph | 5.1, 5.4 |
| DIP.5.AI.8 | Compute simple <i>probability</i> with and without replacement | 6.1, 6.2, 6.3, 6.4, 6.5, 6.Aps |
| DIP.5.AI.9 | Recognize patterns using <i>explicitly</i> defined and <i>recursively</i> defined linear functions | Not covered |
| DIP.5.AI.10 | Communicate real world problems graphically, algebraically, numerically and verbally | Used throughout the text, specifically in Math Applications |