Algebra Fundamentals Core Targets

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| AF I | AF II | AF III | Target  **Students should be able to demonstrate the following:** |
|  |  |  | Pre-Algebra and Arithmetic Review |
|  |  |  | I can determine absolute value of a number  Know = 2 and what this really means. |
|  |  |  | I can determine sets of numbers  Real, rational, integer, whole, positive, negative |
|  |  |  | I can multiply, divide, add, and subtract integers |
|  |  |  | I can multiply, divide, add, and subtract fractions |
|  |  |  | I can multiply, divide, add, and subtract decimals |
|  |  |  | I can determine place value  Units, tens, hundreds, vs. tenths, hundredths, & thousandths |
|  |  |  | I can complete conversion of units  How can I convert inches to feet, etc.? |
|  |  |  | I can reference properties of numbers.  Associative (2+3)+4 = 2 + (3 + 4)  Commutative 2 + 3 = 3 + 2  Distributive 2(3 + 5) = 2(3) + 2(5)  Identity (-5)1 = -5  Property of Zero 30 = 0  Property of -1 -2(-1) = 2 |
|  |  |  | I can simplify linear expressions  (4a -1)2 + a = 9a – 2 |
|  |  |  | I can apply order of operations with integers, fractions, and decimals  PEMDAS; 24×4 – 2 ÷ 8 = 63.75 |
|  |  |  | I can write statements as mathematical expressions  Write the words (sum, difference, product, quotient, greater than, less than) using symbols. +, -, ×, ÷, >, < |
|  |  |  | Linear Equations |
|  |  |  | I can solve linear equations algebraically and graphing solutions on a number line  Solve 2m + 5 = 12 |
|  |  |  | I can solve proportions  Solve |
|  |  |  | I can solve word problems using percents and conversions |
|  |  |  | I can solve absolute value equations  Solve. |
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| AF I | AF II | AF III | Target  **Students should be able to demonstrate the following:** |
|  |  |  | Linear Inequalities |
|  |  |  | I can solve linear inequalities algebraically and graph solutions on a number line  Solve 2x + 5 > 10, etc. and know when do I fill in the circle or leave it “open” |
|  |  |  | I can solve compound inequalities algebraically and graph solutions on a number line.  Solve 2 < x + 5 < 9; Solve 2x + 3 < 9 or 3x – 6 > 12 and graph on a number line |
|  |  |  | Graphing Linear Equations |
|  |  |  | I can determine coordinate plan, quadrants, plotting points  What does it mean to have (x, y)? Can I plot (2, -3)? Which quadrant is III? |
|  |  |  | I can graph equations using a table of values  Graph y = 2x + 4 by finding different (x, y) points |
|  |  |  | I can graph equations using x and y-intercepts  Find x – intercept (x, 0) and y – intercept (0, y) |
|  |  |  | I can find slope algebraically and graphically  Slope = rise/run; |
|  |  |  | I can graph equations using slope and y-intercept  Find (0, y) and then use rise over run |
|  |  |  | I can graph vertical and horizontal lines  Vertical are x = number; Horizontal are y = number |
|  |  |  | I can write the equation of the line from the graph or given information  Find an equation in the form y = mx + b |
|  |  |  | I can write equations of parallel and perpendicular lines  Know that parallel lines have the same slope and perpendicular lines have opposite signs and flipped fractions |
|  |  |  | I can solve word problems by graphing linear equations  y = mx + b |
|  |  |  | I can determine function notation  What does f(x) mean? |
|  |  |  | Graphing Linear Inequalities |
|  |  |  | I can use standard and slope-intercept form  Standard 2x + 3y > 10; Slope-intercept y = 3x + 5 |
|  |  |  | I can graph vertical and horizontal line inequalities |

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| AF I | AF II | AF III | Target  **Students should be able to demonstrate the following:** |
|  |  |  | Systems |
|  |  |  | I can solve systems of linear equations by graphing  Graph 2 equations and look for intersection |
|  |  |  | I can solve systems of linear inequalities by graphing  Graph 2 equations with > or <, shade, overlapping area is answer |
|  |  |  | I can solve systems of equations by substitution  Solve one equation for 1 variable and plug it in to the other equation so that you solve for 1 variable |
|  |  |  | I can solve systems of equations by linear combinations/elimination  Add the 2 equations vertically to get rid of a variable |
|  |  |  | I can solve word problems involving systems of equations  Word problems setting up 2 equations |
|  |  |  | Properties of Exponents |
|  |  |  | I can use zero power and power to a power properties  x0 = 1; (xw)b = xbw |
|  |  |  | I can use product/quotient to a power  (4x3)2 = 16x6; |
|  |  |  | I can use negative exponent property |
|  |  |  | I can use properties and operations with polynomials  Add, Subtract, Multiply, Divide like terms and simplify |
|  |  |  | I can use scientific notation |
|  |  |  | Probability and Stats |
|  |  |  | I can recognize basic probability as the chance an event will occur |
|  |  |  | I can recognize that compound probability is the chance that event A or event B will happen |
|  |  |  | I can recognize and calculate mean, median, and mode  Average, middle number, number that happened most |
|  |  |  | I can use Box and Whisker, Stem and Leaf Plots |

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| AF I | AF II | AF III | Target  **Students should be able to demonstrate the following:** |
|  |  |  | Radicals |
|  |  |  | I can identify radical notation  What does finding square root mean? What is the symbol? |
|  |  |  | I can simplify radicals |
|  |  |  | I can perform operations with radicals  Multiply, divide, add, subtract radicals |
|  |  |  | I can perform rationalizing  Get rid of radicals in the bottom of fractions |
|  |  |  | I can solve basic radical equations |
|  |  |  | I can use the Pythagorean Theorem  a2 + b2 = c2 |
|  |  |  | Solving Quadratic Equations |
|  |  |  | I can factor linear and quadratic equations with GCF |
|  |  |  | I can factor quadratic equations with a leading coefficient of 1  X2 + 11x + 18 |
|  |  |  | I can factor quadratic equations with a leading coefficient not 1  2x2 – 7x+ 3 |
|  |  |  | I can factor quadratic equations by grouping  X3 + 3x2 + 5x + 15 |
|  |  |  | I can solve quadratic equations by factoring  (x – 4) (x + 2) = 0 |
|  |  |  | I can solve quadratic equations by square roots  2x2 = 8 |
|  |  |  | I can solve quadratic equations by using the quadratic formula |
|  |  |  | Graphing Quadratic Equations |
|  |  |  | I received an introduction to parabola and graphing in standard form |