Middle School Algebra (8th Grade) Trimester 1 Learning Targets

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| **Unit 1: Real Numbers and Applications** |
| **LT Number** | **Learning Target** | **Days***15-17* | **Book Ref** |
| 1 | I can solve real world and mathematical problems related to relationships between squares of a number and their square roots |  |  |
| 2 | I can apply the relationship between the area of a square and the side length to solve problems involving square roots of positive integers |  |  |
| 3 | I can justify the Pythagorean Theorem by creating representations of right triangles to find the relationship between the area of the squares on the legs compared to the area of the square on the hypotenuse |  |  |
| 4 | I can solve real world and mathematical problems related to right triangles for determining the length of the hypotenuse given the length of both legs or determining the length of one leg given the other leg and the hypotenuse |  | 2. #34 |
| 5 | I can determine the distance between any two horizontal or vertical points in a coordinate system |  | 2. #35 |
| 6 | I can apply the distance formula by representing a right triangle on the coordinate grid to use the Pythagorean Theorem to determine the length of the shortest line between two non-vertical or non-horizontal points on a coordinate system |  | 2. #35 |
| 7 | I can classify real numbers as rational or irrational |  | 1. #7 |
| 8 | I can determine if a square root is rational or irrational  |  | 1. #7 |
| 9 | I can evaluate the sum or product of a rational number with an irrational number (the sum or product is always an irrational number) |  | 1. #5 |
| 10 | I can locate rational and irrational numbers on a number line |  | 1. #5 |
| 11 | I can compare real numbers |  | 1. #5 |
| 12 | I can make rational approximations of square roots with and without using a calculator |  |  |
| 13 | I can determine between which two consecutive integers the non-integer square root of a positive integer is located  |  |  |
| 14 | I can determine the rational approximations for solutions to problems involving real numbers |  |  |

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| **LT number** | **Prior to Unit 2** | **Days** | **Book Ref** |
| 15 | I can evaluate an algebraic expression (including expressions containing radicals and absolute values) by replacing the variable with the defined values and using order of operations  |  | 1. #3 #6 #7 |
| **Unit 2: Function Concepts & Representations** |
| **LT Number** | **Learning Target** | **Days***21-23* | **Book Ref** |
| 16 | I can identify independent (input) and dependent (output) variables in real-life situations  |  |  |
| 17 | I can understand that in order for a relationship to be a function, for every input there is only one possible output  |  |  |
| 18 | I can understand that there is a relationship between input and output, and then represent this relationship in function notation |  |  |
| 19 | I can use function notation f(x) to represent linear relationships  |  |  |
| 20 | I can recognize a linear function from its graph, table, or equation |  |  |
| 21 | I can use linear functions to represent relationships where x is the input and f(x) is the output |  |  |
| 22 | I can change the input value to cause a change in the output value that is a constant times that amount  |  |  |
| 23 | I understand that a function is linear if it can be expressed in the form f(x)=mx + b or if its graph is a straight line  |  | 1. #48-50 |
| 24 | I can represent linear functions with tables, verbal descriptions, symbols, equations and graphs |  | 1 #48-50 |
| 25 | I can translate from any representation (tabular, verbal, symbolic, equation and graphical) to another |  |  |
| 26 | I understand that slope equals the rate of change (in any representation)  |  | 2 #3-4 |
| 27 | I understand that the y-intercept is zero when the function represents a proportional relationship |  |  |
| 28 | I can Identify the slope and y-intercept of a linear function in any representation |  | 2. #6 |
| 29 | I can interpret the slope and y-intercept in the context of the given situation |  | 2. #9 |
| 30 | I can determine the slope of any line given two coordinate pairs  |  | 2. #3-4 |
| 31 | I can evaluate the effect of changing the coefficient and the corresponding effect on the change of the line on the graph |  |  |
| 32 | I know how to use graphing technology to examine the effects on graphs of linear functions |  |  |