**Virginia Mathematics Standards of Learning Tracking Log**

**Bridging from Algebra II**

The skills and strategies introduced in the Mathematics Standards of Learning vertically articulate from kindergarten to high school and many standards build in complexity within K-12 instruction. Teachers can use this tracker to help determine which standards students have had sufficient exposure and experience during the previous school year to make decisions regarding when and how experience with new standards might occur in the current school year.

|  | **Addressed during previous school year** | **Not Addressed/ Insufficient Exposure during previous school year** | **Comments** |
| --- | --- | --- | --- |
| AII.1a The student will add, subtract, multiply, divide, and simplify rational algebraic expressions; |  |  |  |
| AII.1b The student will add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents; and |  |  |  |
| AII.1c The student will factor polynomials completely in one or two variables. |  |  |  |
| AII.2 The student will perform operations on complex numbers and express the results in simplest form using patterns of the powers of *i*. |  |  |  |
| AII.3a The student will solve absolute value linear equations and inequalities; |  |  |  |
| AII.3b The student will solve quadratic equations over the set of complex numbers; |  |  |  |
| AII.3c The student will solve equations containing rational algebraic expressions; and |  |  |  |
| AII.3d The student will solve equations containing radical expressions. |  |  |  |
| AII.4 The student will solve systems of linear-quadratic and quadratic-quadratic equations, algebraically and graphically. |  |  |  |
| |  | | --- | | AII.5 The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve practical problems, including writing the first *n* terms, determining the *nth* term, and evaluating summation formulas. Notation will include  and *an.* | |  |  |  |
| AII.6a For absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic functions, the student will recognize the general shape of function families; and |  |  |  |
| AII.6b For absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic functions, the student will use knowledge of transformations to convert between equations and the corresponding graphs of functions. |  |  |  |
| AII.7a The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include domain, range, and continuity; |  |  |  |
| AII.7b The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include intervals in which a function is increasing or decreasing; |  |  |  |
| AII.7c The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include extrema; |  |  |  |
| AII.7d The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include zeros; |  |  |  |
| AII.7e The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include intercepts; |  |  |  |
| AII.7f The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include values of a function for elements in its domain; |  |  |  |
| AII.7g The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include connections between and among multiple representations of functions using verbal descriptions, tables, equations, and graphs; |  |  |  |
| AII.7h The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include end behavior; |  |  |  |
| AII.7i The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include vertical and horizontal asymptotes; |  |  |  |
| AII.7j The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include inverse of a function; and |  |  |  |
| AII.7k The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include composition of functions algebraically and graphically. |  |  |  |
| AII.8 The student will investigate and describe the relationships among solutions of an equation, zeros of a function, x-intercepts of a graph, and factors of a polynomial expression. |  |  |  |
| AII.9 The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve practical problems, using mathematical models of quadratic and exponential functions. |  |  |  |
| All.10 The student will represent and solve problems, including practical problems, involving inverse variation, joint variation, and a combination of direct and inverse variations. |  |  |  |
| All.11a The student will identify and describe properties of a normal distribution; |  |  |  |
| All.11b The student will interpret and compare z-scores for normally distributed data; and |  |  |  |
| All.11c The student will apply properties of normal distributions to determine probabilities associated with areas under the standard normal curve. |  |  |  |
| All.12 The student will compute and distinguish between permutations and combinations. |  |  |  |