**Algebra 2B Standards and Scales**

**Module 12A Students will be able to write explicit and recursive rules for both arithmetic and geometric sequences**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can translate between the recursive and explicit rules. (i.e. given the explicit rule, write the recursive) |
| **Level 2**  Students can demonstrate knowledge of the following  \_\_\_ write explicit and recursive rules for arithmetic sequences  \_\_\_ write explicit and recursive rules for geometric sequences |

**Module 12B: Students will be able to find the sum of a finite geometric series.**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can determine how many terms a geometric series has and then find the sum. |
| **Level 2**  Students can find the sum of a finite geometric series. |
| **Level 1**  Student can identify the a-value, n-value, and r-value, but calculations in finding the sum are erroneous. |

**Module 13: Students will be able to model & graph exponential functions (including the base e)**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations (compound interest) |
| **Level 3**  Students can demonstrate knowledge of the following:  \_\_model with an exponential growth function  \_\_ model with an exponential function with the base e |
| **Level 2**  Students can  \_\_graph y= a·b (x-h)+k and state the domain and range  \_\_ graph y = a·e(x-h)+k and state the domain and range |

**Module 15: Students will be able define, evaluate and graph logarithmic functions.**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations. |
| **Level 3**  Students can demonstrate knowledge of BOTH of the following:  \_\_ graph combined transformations of logarithmic functions  \_\_ be able to describe the transformation from the parent function and identify the reference points, asymptote, domain, and range |
| **Level 2**  Students can  \_\_\_ graph combined transformations of logarithmic functions |
| **Level 1**  Student can  \_\_\_Convert between exponential and logarithmic forms of equations  \_\_\_Evaluate logarithmic functions by thinking in terms of exponents |
| **Level 0**  Student can demonstrate no knowledge of the standard or objectives. |

**Module 16: Students will be able to simplify and solve exponential equations using logarithms**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations. |
| **Level 3**  Students can demonstrate knowledge of the following:  \_\_ solving exponential equations |
| **Level 2**  Students can  \_\_\_ simplify expressions using logarithmic properties |
| **Level 1**  Student can complete level 2 with errors. |
| **Level 0**  Student can demonstrate no knowledge of the standard or objectives. |

**Module 19: Students will be able to find the probability of an event occurring using the fundamental counting principle, permutations and combinations (including mutually exclusive and inclusive events)**

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| **Level 4**  Student will be able to find the probability of more complex events |
| **Level 3**  Student will be able to find the probability of an event occurring using the FCP, permutations and combinations (including mutually exclusive and inclusive events) |
| **Level 2**  Student will be able to count the number of ways an event can occur using the FCP, Permutations and combinations |

**Module 20/21: Students will be able to find the probability of conditional and independent Events**

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| **Level 4**  Student will be able to solve more complex problems involving probabilities. |
| **Level 3**  Student will be able to determine if two events are independent or dependent and calculate the probability  Student will be able to calculate conditional probability |
| **Level 2**  Student will be able to calculate probability using a two-way table |

**Module 22: Students will be able to analyze data gathering techniques and measure the shape, center, and spread of the data.**

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| Level 4  I can make and analyze a histogram. |
| Level 3  I can use sample statistics to estimate a population parameter. |
| Level 2  I can identify the population, sampling method and any bias. |
| Level 1  I can use the graphing calculator to find the mean, median, IQR and standard deviation. |

**Students will be able to use data distributions to solve real life problems.**

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| Level 4  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations. |
| Level 3  I can find the probability of an event using z-scores |
| Level 2  I can find the probability of a binomial experiment |
| Level 1  I can find percents of data and probabilities of events associated with normal distributions |

**Trig. #1: Students will be able to write the six trigonometric ratios & solve any right triangle with the Pythagorean identity**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can use sine, cosine and tangent to solve a right triangle |
| **Level 2**  Students can find the value of the each trig function (including exact values) |
| **Level 1**  Students can write the six trig ratios given a right triangle |

**Trig. #2: Students will be able to draw any angle in standard position, convert & analyze between degrees & radians**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can find the exact value of trig functions using the special triangles |
| **Level 2**  Students can convert degrees to radians (and vice-versa) AND find coterminal angles |
| **Level 1**  Students can draw angles in standard position for the unit circle |

**Trig. #3: Students will be able to solve a non-right triangle using the Law of Sines and Law of Cosines**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can solve trig equations |
| **Level 2**  Students can solve triangles using Law of Sines and Law of Cosines |
| **Level 1**  Students can find an angle measure of a right triangle given two side lengths |

**Students will be able to graph and translate the trig functions**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students can demonstrate knowledge of the following  \_\_graph and label in degree and radians Sine that has been translated using ‘h and k’  \_\_graph and label in degree and radians Cosine that has been translated using ‘h and k’  \_\_graph and label in degree and radians Tangent that has been translated using ‘h and k’  \_\_ correctly label domain  \_\_ correctly label range  \_\_ correctly label amplitude  \_\_ correctly label period |
| **Level 2**  Students can demonstrate knowledge of the following for the domain:  - 3600  <  x  < + 3600  \_\_graph and label in degree and radians Sine  \_\_graph and label in degree and radians Cosine  \_\_graph and label in degree and radians Tangent |

**Simplifying and Solving Trigonometric Equations**

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| **Level 4**  Students can demonstrate knowledge of all Level 3 objectives and can apply all of them to real life situations |
| **Level 3**  Students will be able to use sum/difference and double/half angle formulas to simplify and solve trig equations. |
| **Level 2**  Students will be able to solve trigonometric equations. |
| **Level 1**  Students will be able to verify and simplify trigonometric expressions using the trig identities |