Unit 6 October 12th **Exponential Functions**

Day 1 M 10/12	Review of Midterm Arithmetic and Geometric Sequences	HW: Ladybug Investigation
Day 2 T 10/13	Pay it forward video Bacteria/ Bounce ball	HW: Independent Practice: Killer Pains
Day 3 W 10/14 PSAT	NCAA Warm up Growth Decay notes **Inherited Project Due Monday 10/19 for quiz grade**	HW: Independent Practice: Growth and Decay
Day 4 Th 10/15	Compound Interest (Visual Aid) **QUIZ**	HW: Independent Practice with compound interest
Day 5 F 10/16 Early release	Translations: Identify the y-intercept and then moving the function	HW: Translations
Day 6 M 10/19	Review	Finish Review Sheet
Day 7 T 10/20	**Unit 6 Test**	

By the end of the unit, you should be able to….

- Use exponential functions model real world problems, of growth and decay, such as monetary growth, population increases or decreases, car values, half-life, etc.
- Translate between the recursive (NOW-NEXT) and explicit form ($f(x) = a \cdot b^x$).
- Interpret the initial value/y-intercept of exponential function written in recursive or explicit form in terms of a context.
- Find solutions to exponential equations using the graph of the corresponding exponential function.
- Construct an exponential function which may be read from a table
- Graph an exponential equation given an equation of the form $f(x) = a \cdot b^x$.
- Explain the effect on the parent graph $f(x)$ when replacing $f(x)$ by $f(x) + k$ and $f(x + k)$ for specific values of k by shifting the graph
- Determine the percent rate of change of an exponential function and classify the function as representing exponential growth or decay.
- Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
- Use the explicit form for an exponential function is $f(x) = a \cdot b^x$, where a is the initial value and b is the common ratio, often called the base.
- Determine that an exponential function that has a common ratio greater than 1 is growing.
- Determine that an exponential function that has a common ratio between 0 and 1 is decaying.