Unit #5: Exponential Functions/Logs

Content Area: **Mathematics**
Course(s): **PreCalc Trig A**
Time Period: **Semester 1**
Length: **3 weeks**
Status: **Published**

Standards

MA.F-IF.C.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
MA.F-IF.C.8b	Use the properties of exponents to interpret expressions for exponential functions.
MA.F-LE.A.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
MA.F-LE.A.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

Enduring Understandings

Students will know that exponential functions and logarithmic fucntions are inverse functions of each other.

They will know how to solve both types of equations and relate their solutions to real-world situations.

Essential Questions

What does the graph of an exponential vs. a logarithmic equation look like?

How can log equations be simplified and expanded?

How can log equations be solved?

Knowledge and Skills

- Know the properties and graphs of y=a^x and y=e^x.
- Define and know the properties of log functions.
- Graph log functions.
- Evaluate log expressions using laws of logs.

Transfer Goals

Recognize and solve practical or theoretical problems involving mathematics, including those for which the solution approach is not obvious, by using mathematical reasoning and strategic thinking.

Resources

1. Pre-Calculus with Limits - Aufmann
2. Trigonometry 6th edition - Lial
3. Classkick
4. Khan Academy
5. PurpleMath
6. KutaSoftware
7. CK-12
8. Quizlet
9. Albert I/O
10. Desmos
11. Problem Attic