

# Unit #6: Logs (Part II)/ Real World Applications

Content Area: **Mathematics**  
Course(s): **PreCalc Trig A**  
Time Period: **Semester 1**  
Length: **2 weeks**  
Status: **Published**

## Standards

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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.
MA.F-LE.A.4	Understand the inverse relationship between exponents and logarithms. For exponential models, express as a logarithm the solution to $ab$ to the $ct$ power = $d$ where $a$ , $c$ , and $d$ are numbers and the base $b$ is 2, 10, or $e$ ; evaluate the logarithm using technology.
MA.F-LE.A.1c	Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
MA.F-LE.B.5	Interpret the parameters in a linear or exponential function in terms of a context.

## Enduring Understandings

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What good decisions can be made from understanding real world applications of logs.

Changing the structure of an expression allows solving a variety of problems.

## Essential Questions

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What procedures are needed to solve log equations?

How do interest formulas develop real world understandings of finances?

How does growth and decay provide valuable insight in decision making?

## Knowledge and Skills

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- Solve log equations using a graphing calculator.
- Solve compound and simple interest, growth and decay, and half-life word problems.

## **Transfer Goals**

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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**

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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