Algebra 1B Unit 05: Exponents and Exponential Functions

Content Area: **Math**
Course(s): **Algebra I B**
Time Period: **Semester 1**
Length: **5 cycles**
Status: **Published**

Unit Introduction

Standards

MA.F-IF.A.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.
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.N-RN.A.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.
MA.N-RN.A.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.
MA.A-SSE.B.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

Essential Questions

- How can you simplify expressions with exponents?
- What are the characteristics of exponential functions?

Content

- Division Properties of Exponents
- Exponential Functions
- Multiplication Powers with the Same Base
- Rational Exponents and Radicals
- Zero and Negative Exponents

Skills

- Converting to Radical Form
- Converting to Rational Form
- Dividing Algebraic Expressions
- Evaluate an Exponential Expression
- Evaluate an Exponential Function
- Finding Recursive and Explicit Formulas
- Finding Roots
- Graph an Exponential Functions
- Identify Linear and Exponential Functions
- Model Exponential Growth/Decay
- Multiply Powers
- Multiply Powers in Algebraic Expressions
- Raising a Quotient to a Power
- Simplify Exponential Expressions
- Simplify Powers
- Simplifying a Power Raised to a Power
- Simplifying a Product Raised to a Power
- Simplifying an Exponential Expression
- Simplifying an Expression with Powers
- Simplifying Expressions with Rational Exponents
- Use graphing calculators and technology where appropriate
- Use relevant vocabulary, notations, and symbols when appropriate
- Writing Geometric Sequences as Functions