Unit #3: Polynomial Expressions and Factoring

Content Area: **Mathematics**
Course(s): **Algebra 1CP**
Time Period: **Semester 2**
Length: **12 weeks**
Status: **Published**

Standards

MA.A-SSE.A.1a	Interpret parts of an expression, such as terms, factors, and coefficients.
MA.A-SSE.A.1b	Interpret complicated expressions by viewing one or more of their parts as a single entity.
MA.A-SSE.A.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.
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.
MA.A-APR.A.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
MA.A-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

Enduring Understandings

1. Equivalent forms of algebraic expressions provide different information for solving problems.

2. Not all situations in life are linear in nature.

3. Polynomial functions are a class of curved relationships that fit many real-life applications.

4. Exponents are the students first introduction to non-linear functions and are involved in many higher order mathematical concepts.

Essential Questions

1. What different information is obtained from equivalent forms of algebraic expressions?

2. How do linear and non linear functions compare?

3. How do quadratic functions model real world problems and their solutions?

Knowledge and Skills

- Utilize the rules of exponents to simplify expressions.
- Perform various operations on, and fully simplify radical terms.
- Rewrite polynomial expressions using various factoring methods (factoring out a GCF, DOTS, factoring trinomials, and grouping).

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.

In this unit students will be able to identify when to use core mechanics to solve problems and the proper implementation of these methods.

Resources

Holt Algebra 1, Nichols
Algebra Structure and Method Book 1

Khan Academy

PurpleMath

KutaSoftware

CK-12

Quizlet

Albert I/O

Desmos

Problem-Attic

Classkick