MP3a-Polynomials and Factoring

Content Area: **Math**
Course(s): **Algebra 1 Accelerated**
Time Period: **Marking Period 3**
Length: **enVision Chapter 7,16 days**
Status: **Published**

Essential Questions

- How do you work with polynomials to rewrite expressions and solve problems?

Big Ideas

- Find greatest common factors.
- Factor polynomials.
- Factor perfect-square trinomials and differences of squares.
- Choosing a factoring method.

Cross-Curricular Integration

Integration Area: Language Arts

LA.8.W.8.4 Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

LA.8.SL.8.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

Activity:
Students are tasked with creating a poem where they incorporate at least five polynomial-related terms (e.g., monomial, binomial, degree, coefficient, etc.) and use them metaphorically or creatively to describe a non-mathematical subject, such as nature, emotions, or even characters from stories. They should also include at least one actual polynomial expression in the poem.

CSDT Technology Connection

8.1.8AP.2 : Create programs that use clearly named variables to store and modify data

Enduring Understandings

Seeing Structure in Expressions

A.SSE.A1 Interpret expressions that represent a quantity in terms of its context.★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret P(1+r) n as the product of P and a factor not depending on P

A.SSE.A2 Use the structure of an expression to identify ways to rewrite it. For example, see x4 – y4 as (x2)2 – (y2)2, thus recognizing it as a difference of squares that can be factored as
(x2 – y2)(x2 + y2).

- Factors and the Greatest Common Factors
- Factoring by GCF
- Factoring x^2 + bx + c
- Factoring ax^2 + bx + c
- Factoring Special Products
- Choosing a Factoring Method

Arithmetic with Polynomials & Rational Expressions

A.APR.A.1 Understand that polynomials form a system analogues to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

- Adding and Subtracting Polynomials
- Multiplying Polynomials
- Special Products of Polynomials

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Pages 267, 295, 301

2. Reason abstractly and quantitatively. Pages 259, 281, 287, 295, 301

3. Construct viable arguments and critique the reasoning of others. Pages 275

4. Model with mathematics. Pages 294

5. Use appropriate tools strategically. Pages 287

6. Attend to precision.

7. Look for and make use of structure. Pages 259, 267, 275, 281, 287, 295, 301

8. Look for and express regularity in repeated reasoning. Page 259, 267, 275, 281