Algebra 1 CP Unit 5: Polynomials

Unit #:	APSDO-00018612	Duration:	5.0 Week(s)	Date(s):	

Team:
Melinda Litke (Author), Tracy Andreana, Sally deGozzaldi, Jennifer Greene, Jeanine LaBrosse, Jaclyn Lawlor, Melinda Litke, Ben Lukowicz, Jennifer Miller, Matthew Mooney, James Murray, Marlaina Napoli, Andrew Riddle, Steven Rivoira, Donna Beaudoin, Nicole Gresh, Steven Muench
Grades:
9
Subjects:
Mathematics

Unit Focus

In this unit, students will classify polynomials, re-write them in descending order, and perform operations with polynomials. Specific operations performed on the polynomials will include adding, subtracting, multiplying and dividing, including long division. They will factor polynomials in the form of perfect square trinomials, greatest common factor, grouping, trinomials, and difference of two squares. Summative assessments may include projects, labs, and tests. Primary instructional materials for this unit include Algebra I, Glencoe/McGraw Hill, 2014.

Stage 1: Desired Results - Key Understandings

Established Goals

Common Core
Mathematics: 9

- Interpret parts of an expression, such as terms, factors, and coefficients. *CCSS.MATH.CONTENT.HSA.SSE.A.1.A*
- 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. *CCSS.MATH.CONTENT.HSA.APR.A.1*
- Use the structure of an expression to identify ways to rewrite it. For example,

Transfer

T1 (T50) Based on an understanding of any problem, initiate a plan, execute it and evaluate the reasonableness of the solution.
T2 (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense.
T3 (T51) Examine alternate methods to accurately and efficiently solve problems.
T4 (T52) Use appropriate tools strategically to deepen understanding of mathematical concepts.
T5 (T20) Compose and decompose numbers to establish relationships, perform operations, and solve problems.
T6 (T21) Perform operations in a conventional order within the real and complex number system.
T7 (T22) Describe and/or solve problems using algebraic expressions, equations, inequalities, and functions.

Meaning

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). *CCSS.MATH.CONTENT.HSA.SSE.A.2*
- Look for and express regularity in repeated reasoning. *CCSS.MATH.MP.8*
- Make sense of problems and persevere in solving them. *CCSS.MATH.MP.1*
- Reason abstractly and quantitatively. *CCSS.MATH.MP.2*

Understandings	Essential Questions
U1 (U103) The same value can be represented in multiple ways. **U2** (U202) The application of specific properties and order of operations can simplify expressions, solve equations, and combine functions. **U3** (U203) Certain mathematical manipulations preserve the relationship in an expression or equation, even though they change the representation. **U4** (U502) Effective problem solvers identify and apply an appropriate model, tool, or strategy. **U5** (U503) Effective problem solvers try multiple strategies when struggling. **U6** (U511) Placing a problem in a category gives you a familiar approach to solving it. **U7** (U561) Recognition of patterns and structures fosters efficiency in solving problems.	**Q1** (Q102) What rule do I know OR what pattern can I recognize to help me make a prediction/solve this problem? **Q2** (Q207) How do I classify, interpret, and compare functions or equations? (Gr. 8-12) **Q3** (Q503) What strategies/approaches are best for this problem? **Q4** (Q504) What do I do when I get stuck? **Q5** (Q511) What characteristics/attributes define this type of problem? **Q6** (Q570) How can the repeated application of a process/structure help me solve problems more efficiently?

Acquisition of Knowledge and Skill

Knowledge	Skills
	S1 Classify polynomials using appropriate terminology (naming by number of terms, determining degree, etc) **S2** Re-write polynomials in descending order **S3** Operate with polynomials (adding/subtracting/multiplying/dividing (including long division)

		S4 Factor polynomials including perfect square trinomials, greatest common factor, grouping, trinomials, and difference of two squares

Stage 3: Learning Plan

Coding	Code	Description of Learning Activity

Report produced by Eduplanet21 on: Fri, August 03, 2018 at 8:27 AM