Unit Number and Name	Unit 1 Expressions, Equations and Inequalities		
Unit Question	How can we manipulate information to help us solve real-world problems?		
Essential Questions:	1. How can we represent information symbolically? 2. How do we develop mathematical arguments/proofs for solving real-world situations? 3. How can we use related, but different representations to solve real-world problems?		
Initial Task--1 day	Students will engage in various problem solving strategies in this Mystery Letters Task.		
Big Ideas	**Objectives Reached**	**EQs Addressed**	**Evidence of Understandings**
Big Idea 1: Polynomial expressions can be simplified and evaluated	A1.A.3.2 A1.A.3.4	EQ1 EQ3	**Generate equivalent expressions using operations on whole numbers and exponents** ○ Add and subtract like terms within a polynomial expression ■ Determine when an expression is completely simplified ○ Multiply terms in a polynomial expression and use proper exponent rules ■ Understand what happens to the power of a variable when multiplied ● Justify reasoning

			Evaluate a polynomial expression ○ Evaluate a variety of algebraic expressions including absolute value, radicals (square or cube roots), or rationals for given values of the variables. ○ Understand how to reason and work with a non-standard operation. Ex. $3 \oplus (4 \oplus 4)$ when $a \oplus b = \frac{ab}{(a+b)}$ $3 \oplus \left(\frac{4(4)}{(4+4)}\right)$ $3 \oplus \left(\frac{16}{8}\right)$ $3 \oplus 2$ $\frac{3(2)}{(3+2)}$ $\frac{6}{5}$ * Justify reasoning
Big Idea 1 should take about 5 fifty minute class periods.			[Unit 1 Core Resource 1]
Big Idea 2: Polynomial expressions can be written as factors.	A1.A.3.3	EQ1 EQ3	**Factor out a GCF** ○ Identify when an expression has a common factor that can be factored out ○ Determine the greatest common monomial factor ○ Divide out that factor **Factor a quadratic expression** ○ Use knowledge of multiplication of polynomial expressions to factor a quadratic equation into two binomials if possible ○ Understand how the signs of the binomials affect the quadratic

			expression
Big Idea 2 should take about 4 fifty minute class periods.			**Unit 1 Core Resource 2**
Formative Assessment		After big ideas 1 and 2, the formative assessment should take about one fifty minute class period.	**Unit 1 Formative Assessment 1**
Big Idea 3: Square and cube roots can be added, subtracted, multiplied, divided, and simplified	A1.N.1.1 A1.N.1.2	EQ1 EQ3	**Simplify square roots and cube roots** ○ Use knowledge of factors to produce simplest form of roots ○ Apply absolute value bars when taking the square root of a variable that results in an odd exponent **Perform arithmetic operations on square roots** ○ Add and subtract square roots ■ Combine like radicals by adding or subtracting the coefficients ■ Understand that radical will not change when adding or subtracting ○ Multiply a square root ■ Multiplying will change the radicand and might need to be simplified further ○ Divide square roots ■ Simplifying square roots may make it easier to rationalize ■ Radicals may not be left in the denominator and must be rationalized
Big Idea should take about four fifty minute class periods.			**Unit 1 Core Resource 3**

4.Equations and inequalities can be solved in both algebraic and real-world contexts	A1.A.1.1 A1.A.1.2 A1.A.3.1 A1.A.2.2	EQ1 EQ2 EQ3	**Solve equations and inequalities in real-world problems** ○ Use knowledge of solving equations to solve real world problems such as angle measure, geometric formulas, or science and statistics problems. ○ Use formulas or other necessary equations to solve problems ○ Interpret solutions in original context to check for reasonableness **Solve equations with several variables in terms of one specific variable** ○ Apply algebraic properties of equality in order to create equivalent equations in order to isolate the appropriate variable. **Solve absolute value equations** ○ Know that absolute value is a distance from zero and results in two solutions, one in each direction (positive and negative) ○ Isolate absolute value before solving equation ○ Recognize |x-a| =b is b units away from a since |x|=b is b units away from zero ○ Solve absolute value equations and interpret the solutions in the original context **Solve and graph compound and absolute value inequalities**

			○ Compound inequalities can have separate ,or disjoint, solutions or overlapping, conjunction, solutions ○ Make connections between algebraic and graphical solutions ○ Graph solutions to inequalities on a number line. ○ Identify two separate inequalities of absolute value and determine outcome of their graphs ○ Write and graph compound inequalities given a real world situation ○ Use correct vocabulary of compound inequalities and determine number of solutions ■ Know the difference between disjunction and conjunction solutions
Big Idea 4 should take about six fifty minute class periods.			**Unit 1 Core Resource 4**
Formative Assessment	After big ideas 3 and 4, the formative assessment should take about one fifty minute class period.		Unit 1 Formative Assessment 2
Reengagement	Take a day or two to revisit concepts students struggled with in the formative assessments.		
Summative Assessment			Unit 1 Assessment

Essential Terms--
Expression
Term
Coefficient
Polynomial

Monomial
Binomial
Factor
Simplify
Quadratic
Square root
Cube root
Equation
Inequality
Absolute value
equality