Interpret the structure of expressions (A.SSE.1-2)	
Standard A.SSE.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 $(x^2 - y^2)(x^2 + y^2)$.	
Concepts and Skills to Master	
• Rewrite expressions using structure to identify important components of the expression (for example, to determine where zeros may occur or to identify the end behavior).	
Related Standards: Current Course	Related Standards: Future Courses
II.A.SSE.1, II.A.SSE.3, II.A.REI.4, II.N.RN.2, II.N.CN.8	III.A.CED.4, III.A.SSE.1, III.A.SSE.2, III.A.APR.4, III.A.APR.5, III.A.APR.7, III.N.CN.8, III.F.IF.7c, III.F.IF.8, P.F.IF.7d

Support for Teachers

Critical Background Knowledge
• Apply properties of operations (commutative, associative, distributive) to generate equivalent expressions (6.EE.3)
• Understand that rewriting an expression in different forms can shed light on the problem and how the quantities in it are related (7.EE.2)
• Expand expressions using the distributive property (8.EE.7b)
Academic Vocabulary
Resources
Curriculum Resources: https://www.uen.org/core/core.do?courseNum=5620#71497

Write expressions in equivalent forms to solve problems, balancing conceptual understanding and procedural fluency in work with equivalent expressions (A.SSE.3)

Standard A.SSE.3: Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. *For example, development of skill in factoring and completing the square goes hand in hand with understanding what different forms of a quadratic expression reveal.* ★

   a. Factor a quadratic expression to reveal the zeros of the function it defines.
   b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.
   c. Use the properties of exponents to transform expressions for exponential functions. *For example, the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*

Concepts and Skills to Master

   - Explain how to use equivalent forms of expressions to determine important components of a quadratic function.
   - Solve contextual problems using equivalent forms of expressions (for example, find extrema, end behavior and growth/decay factors).

Related Standards: Current Course	Related Standards: Future Courses
II.N.RN.2, II.A.SSE.1, II.A.SSE.2, II.A.REI.4, II.F.IF.8, II.F.BF.1b, II.G.GPE.1	III.A.CED.4, III.A.SSE.1, III.A.SSE.2, III.A.APR.4, III.A.APR.6, III.F.IF.7c, III.F.IF.8, P.F.IF.7d, P.G.GPE.2, P.G.GPE.3

Support for Teachers

Critical Background Knowledge

   - Understand the distributive property in simplifying and expanding expressions.
   - Various types of factoring skills.
   - Apply properties of operations (commutative, associative, distributive) to generate equivalent expressions (6.EE.3)
   - Understand that rewriting an expression in different forms can shed light on the problem and how the quantities in it are related (7.EE.2)
   - Expand expressions using the distributive property (8.EE.7b)

Academic Vocabulary
factors, coefficients, terms, exponent, base, constant, variable, binomial, monomial, polynomial

Resources
Curriculum Resources: https://www.uen.org/core/core.do?courseNum=5620#71499