

Core Content

Cluster Title: Interpret the structure of expressions.
Standard A.SSE.1: 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. <i>For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.</i>
Concepts and Skills to Master
<ul style="list-style-type: none"> Identify the parts of any expression as terms, factors, coefficients, exponents, quotients, divisors, dividends, remainders, and constants. Explain the meaning of the parts of an expression as they relate to the entire expression and to the context of the problem. Identify when a rational expression would be defined and the practical domain of a problem situation.

Supports for Teachers

Critical Background Knowledge	
<ul style="list-style-type: none"> Identifying the parts of a linear, exponential or quadratic expression, such as terms, factors, and coefficient (I.A.SSE.1, II.A.SSE.1) Determining the real-world context of the variables, factors, or terms in an expression (I.A.SSE.1, II.A.SSE.1) 	
Academic Vocabulary	
factors, coefficients, terms, exponent, base, constant, variable	
Suggested Instructional Strategies	Resources
<ul style="list-style-type: none"> Extend understanding of the structure of linear, exponential and quadratic functions to radical, rational, logarithmic and polynomial functions. 	
Sample Formative Assessment Tasks	
Skill-Based Task: Given that the volume of a box is $x^3 + 4x^2 + 5x + 2$ with a height of $x + 1$, what are the other dimensions?	Problem Task: Find a radical, rational, or logarithmic function that models natural phenomena, and explain the role of the various parts of the expression.

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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
<ul style="list-style-type: none"> Use the structure of rational and polynomial expressions to rewrite them.

Supports for Teachers

Critical Background Knowledge	
<ul style="list-style-type: none"> Using the structure of quadratic expressions to rewrite them (II.A.SSE.2) 	
Academic Vocabulary	
rational, polynomial	
Suggested Instructional Strategies	Resources
<ul style="list-style-type: none"> Create a matching game using equivalent forms of expressions. 	
Sample Formative Assessment Tasks	
Skill-Based Task: Rewrite $\frac{4x^2}{x+1}$ as a product of two rational expressions.	Problem Task: Ciera says that factoring $5^{2x} + 4 \cdot 5^x + 3$ is really easy. Show and explain what she knows.