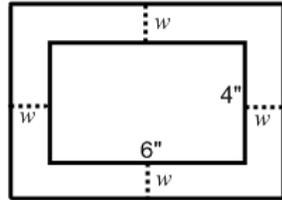


Core Content

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. (For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P .)
Concepts and Skills to Master
<ul style="list-style-type: none"> Identify the parts of an expression, such as terms, factors, and coefficients, bases, exponents, and constant. Explain the meaning of the part in relationship to the entire expression and to the context of the problem. Understand that the product of two binomials is the sum of monomial terms. For example the product of $(3x + 2)$ and $(x - 5)$ is the sum of $3x^2$, $-13x$, and -10.

Supports for Teachers

Critical Background Knowledge	
<ul style="list-style-type: none"> Understand the meaning of symbols indicating mathematical operations, implied operations, the meaning of exponents, and grouping symbols. Understand the meaning of a rational exponent (Secondary II: N.RN.2). 	
Academic Vocabulary	
factors, coefficients, terms, exponent, base, constant, variable, binomial, monomial, polynomial	
Suggested Instructional Strategies	Resources
<ul style="list-style-type: none"> Connect to quadratic functions and transformations. Identify the role of the part in possible transformations. Example: What role do h and k play in $(x - h)^2 + k$? Connect to area models. 	
Sample Formative Assessment Tasks	
<p>Skill-Based Task: Given the quadratic $25x^2 + 30x + 9$, justify that it is a perfect square trinomial. Use what you know about square roots to rewrite $x^2 - 6$ as a difference of two squares.</p>	<p>Problem Task: A frame of width w surrounds a 4 in by 6 in in the picture. Express the area of the frame and the picture. Identify the constant, coefficient, and terms of the area expression and explain how each relates to the dimensions of the picture.</p> 

Core Content

Cluster Title: Interpret the structure of expressions.
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"> Understand that an expression has different forms. Justify the different forms based on mathematical properties. Interpret different symbolic notation.

Supports for Teachers

Critical Background Knowledge	
<ul style="list-style-type: none"> Understand the distributive property in simplifying and expanding expressions. Various types of factoring skills. 	
Academic Vocabulary	
factors, coefficients, terms, exponent, base, constant, variable, binomial, monomial, polynomial	
Suggested Instructional Strategies	Resources
<ul style="list-style-type: none"> This standard should be taught in conjunction with standard A.SSE.3, with heavy emphasis on justification. 	Distributing and factoring using area: http://illuminations.nctm.org/LessonDetail.aspx?id=L744 Difference of squares: http://illuminations.nctm.org/LessonDetail.aspx?id=L276
Sample Formative Assessment Tasks	
Skill-Based Task: Factor $x^6 - y^6$ as the difference of two squares and as the difference of cubes. Justify that the resulting expressions are equivalent.	Problem Task: Explain how you can use the quadratic formula to solve $x^4 - 2x^2 + 35 = 0$.