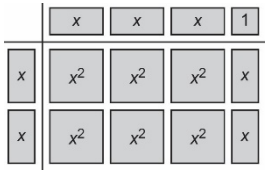
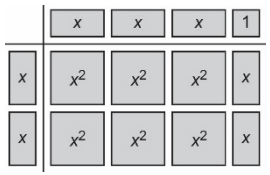
Algebra

Activity 3 Assessment

Multiplying and Dividing Polynomial Expressions

Content: Multiplying and Dividing Polynomials			
Multiplies polynomials concretely by determining area of rectangular region  "$2x(3x + 1) = 6x^2 + 2x$"	Makes connections between multiplication and division to divide polynomials concretely $(6x^2 + 2x) \div 2x = ?$ "I rewrote the division as a multiplication: $? \times 2x = 6x^2 + 2x$. So, I modelled the dividend where the product would be, the divisor as the factor down the side, then worked backward to determine the quotient (at the top).  The quotient is $3x + 1$."	Multiplies and divides polynomial expressions symbolically $(-3x + 1)(4x) = -12x^2 + 4x$ $(-4x^2 + 6x) \div (2x)$ $= \frac{-4x^2}{2x} + \frac{6x}{2x}$ $= -2x + 3$	Connects and applies rules of integers, exponents, and order of operations to operations with polynomials "$2[-4v(2v + 8) + 3v(-5v + 4)]$ $= 2[-8v^2 - 32v - 15v^2 + 12v)]$ $= 2[-23v^2 - 20v]$ $= -46v^2 - 40v$"
Observations/Documentation			

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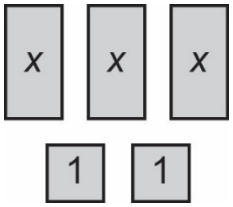
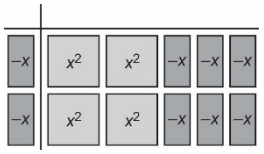
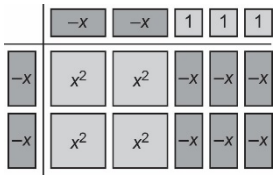
Competency: Connecting and Representing			
Represents a polynomial with algebra tiles "This model represents 3x + 2 because I count three x-tiles and two 1-tiles." 	Represents a given polynomial multiplication or division statement with algebra tiles "I can use an algebra tile template to help me represent the division $(4x^2 - 6x) \div (-2x)$." 	Represents and simplifies given polynomial multiplication and division statements concretely and symbolically, and connects multiplication and division models through inverse operations  "I can check by multiplying. $(-2x)(-2x + 3) = 4x^2 - 6x$."	Flexibly represents and simplifies polynomial multiplication and division statements involving multi-steps symbolically "$(5m^2 - 4m - 3) - 3(2m^2 - 6m) + 2(9m^2 - 3m - 7)$ $= 5m^2 - 4m - 3 - 6m^2 + 18m + 18m^2 - 6m - 14$ $= 17m^2 + 8m - 17$"
Observations/Documentation			