Algebra 1 Unit 1A Review and Area Models Name: _____

AT THE END OF THIS UNIT YOU WILL:		
<u>Know</u> vocabulary, notation, properties, formulas …	**<u>Understand</u> the big ideas …**	**<u>Be able to</u> …**
An expression is a mathematical statement involving variables, constants and operations. An equation "equates" two or more expressions. Working definitions of: term, like terms, coefficient, variable, monomial, binomial, polynomial, expression. Order of operations Factors represent lengths; products represent area.	Every automobile driver must follow the rules of the road to get somewhere, stay safe, and avoid crashes. The language of algebra – symbols, notation, rules, and properties – are like the rules of driving. They allow us to safely get somewhere mathematically using standard rules that we all agree on. Multiplication can be modeled as the area of a rectangle. (Equations and expressions model relationships.) Learning mathematics means learning to reason. Providing evidence of your reasoning process is just as necessary as your final answer. Show the steps of your work; you'll have to do it in your profession.	Evaluate expressions involving exponents and the distributive property. Draw area models for expressions involving multiplication; and rewrite expressions using the area models as justification for equivalency (distributive property) Determine the expression representing the area of a figure. Determine the dimensions of a figure, given the expression representing the area. Rewrite expressions in equivalent forms using area models as justification for equivalency. Show the steps of your work.

Unit Learning Standards and Scales

1	2	**Target: 3**	4
Evidence that I am proficient in evaluating expressions:			
I can use order of operations correctly most of time but not always. I am working on integer ops; the idea that add/subtr and mult/div each have equal priority; $2(3)^x$ means exponent, then multiply.	I am working toward being able to evaluate expressions correctly, but still have some misunderstandings.	**I can evaluate expressions with multiple variables and exponents with positive integers.**	I can evaluate complex expressions with nested grouping symbols, fractions, exponents and/or multiple variables.
Evidence that I can model multiplication with area:			
I can draw a rectangle and determine its area when the factors are integers. *e.g. Draw a rectangle whose sides are m and n. Determine its area.* I can determine the dimensions of the rectangle when its area is an integer.	I can draw a rectangle and determine its area when the dimensions are given in simple algebraic forms. (factors). *e.g. Draw a rectangle whose area is represented by the expression 2(x + 3)* Given the area of figure, as a simple polynomial ("tiles"), I can determine the dimensions of the figure (factoring).	**I can rewrite expressions in equivalent forms using an area model for justification (inventing the Distributive Property).** **I can draw a rectangle and determine its area, given the dimensions in algebraic form (factors).** *e.g. Draw a rectangle whose area is represented by the (3x + 1)(2x + 3) expression:* **Given the area of figure, as a polynomial ("tiles"), I can determine the dimensions of the figure (factoring).**	I can draw a rectangle and determine its area when the dimensions are given in complex algebraic forms. (factors). *e.g* $5x+1= 1/2(10x+2)$ Given the area of figure, as a complex polynomial ("tiles"), I can determine the dimensions of the figure (factoring).
Evidence that I understand that the solution to a problem is the result of mathematical reasoning:			
I can write or verbalize the answer, not my solution process.	I can write or verbalize some evidence of my solution process, but it needs to be interpreted to fully understand my process.	**I can write or verbalize complete evidence of my solution process.**	I can write or verbalize organized and reliable evidence of my solution process and can justify the steps in my solution.