College Preparatory Mathematics Chapter 7 Sample Argumentation Task

7-92. For this number trick, the steps and trials are left for you to complete by using the algebraic expressions. To start, copy the table below on your paper and build each step with algebra tiles.

Steps	Trial 1	Trial 2	Variable Expression
1.			x
2.			$x + 4$
3.			$2(x + 4)$
4.			$2x + 20$
5.			$x + 10$
6.			10

   a. Describe Steps 1, 2, and 3 in words.

   b. Look at the algebra tiles you used to build Step 3. Write a different expression to represent those tiles.

   c. What tiles do you have to add to build Step 4? Complete Steps 4, 5, and 6 in the chart.

   d. Complete two trials and record them in the chart.

7-93. In Step 3 of the last magic trick (problem 7-92) you rewrote the expression $2(x + 4)$ as $2x + 8$. Can all expressions like $2(x + 4)$ be rewritten without parentheses? For example, can $3(x + 5)$ be rewritten without parentheses? Build $3(x + 5)$ with tiles and write another expression to represent it. Does this work for all expressions?

In the above sample, problems 7-92 and 7-93 can be combined to make a HIGH QUALITY argument task. 7-92 provides students with evidence to be used when working on generalizing concepts, using **logic and patterns** and **explaining their reasoning** in 7-93. This is also a great opportunity to talk about how to argue that a formula ALWAYS works or how to disprove this.

"Can all expressions like 2(x+4) be rewritten without parenthesis as 2x+8? Use the pattern from problem 7-92 to support your claim. Be sure to explain your reasoning."