Circle Fever

Step 1   Step 2   Step 3
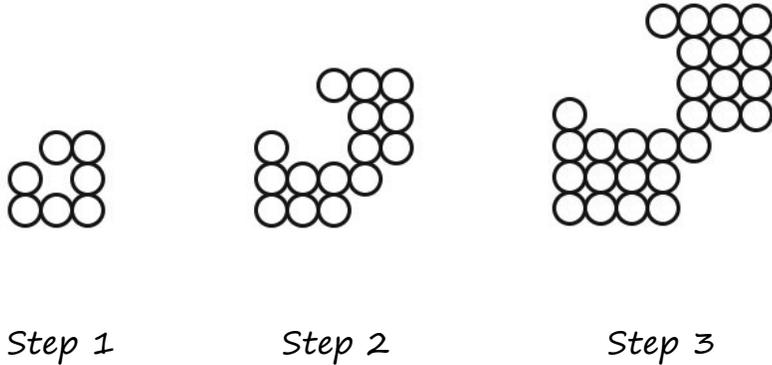
7 circles are required to build Step 1. It takes 15 circles to build Step 2, while it takes 27 circles to build Step 3. If the pattern continues, how many circles will it take to build the 100th step? Furthermore, provide an explicit formula that can be used to determine the number of circles it takes to build any step.

In order to receive full credit, you must relate each aspect of your formula to the pictorial representation. This problem is worth a total of 3 puzzle pieces.

Go to Room 205 of Stanley Hall to present your solution.