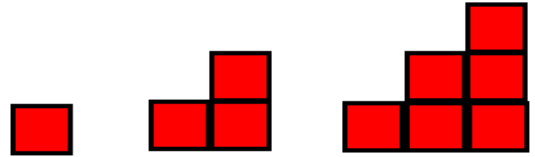


Building Equations with our hands and our minds

Sequences and series are an important part of the high school curriculum. On this page we see the sequence of numbers known as the triangular numbers. Using the linking cubes at your table build at least the first six terms of this sequence with your group. Consider each of the following questions:



What is the tenth term in this sequence? The 20th? The n^{th} term? Justify your claims with symbols, pictures, and words.

Explore adding $t_1 + t_2$, $t_2 + t_3$, $t_3 + t_4$, and so on. What sequence of numbers is generated? What is true for $t_n + t_{n+1}$? How can you use your models to show this?

What happens if you add $t_1 + t_3$, $t_2 + t_4$, and so on. Can you make a general prediction about this sequence as well? How can you use your models to show this sequence?