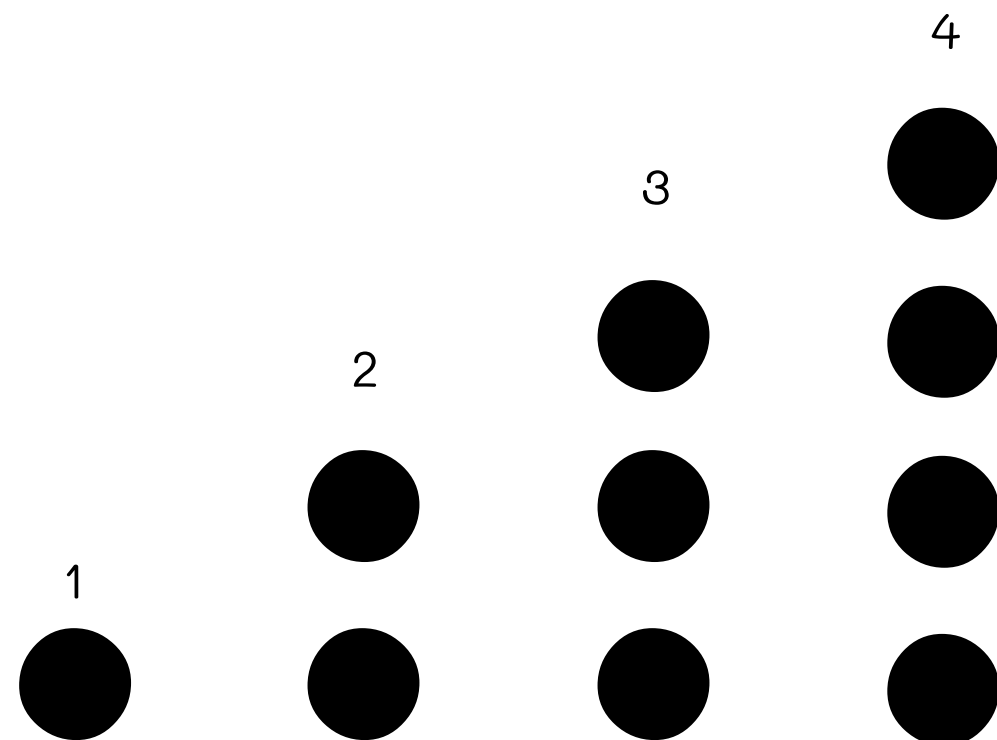


# Shape Numbers

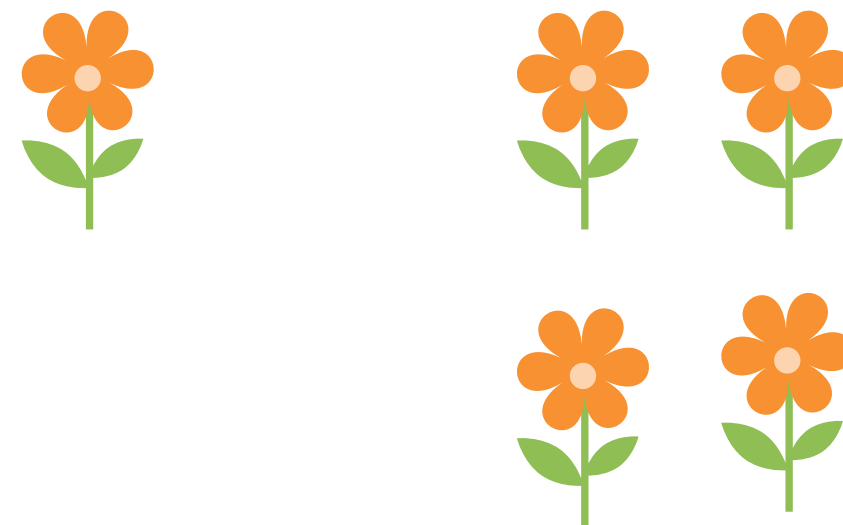
## Chapel Hill Math Circle

Let's start with the simplest shape: a line! How many objects are in each line number?

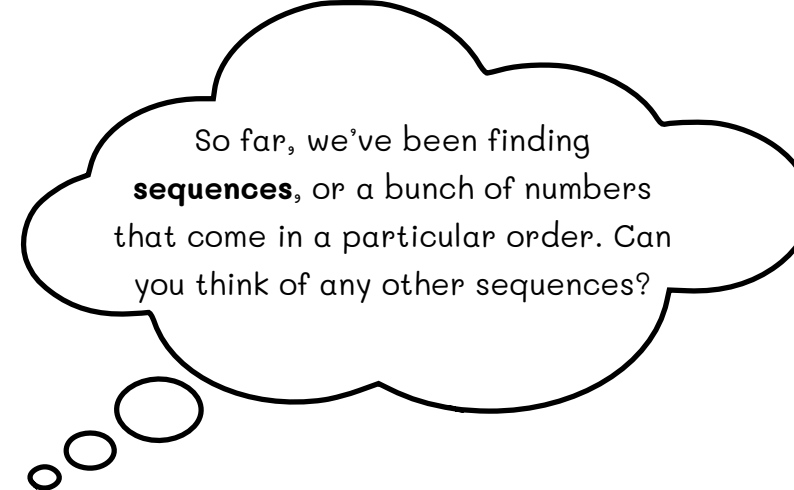


These are our **square numbers**, or numbers that we can neatly arrange into a square. What are the first 5 square numbers?

Victoria is planting a garden, and wants to arrange her plants in a square formation (with the same number of plants in each row and column). How many plants does she need if there are 2 rows? 3?  $n$ ?



Dorian's favorite shape is a triangle! What might triangular numbers look like? Draw the first 5 triangular numbers.



Is there a pattern to get from one triangular number to the next? What if you wanted to find the 100<sup>th</sup> triangular number without counting all the ones before it?

Now, it's your turn! Come up with your own shape number. Name it and see if you can find a pattern.

