

# Elementary Math

## What is a number?

**Number** A natural number is a string of ones

Natural numbers form a sequence and have relative size. The natural numbers are also known as the counting numbers. We can **count** with numbers because they form a sequence and we can **measure** with numbers because they have relative size.

## Sequence

The successor function demonstrates the sequential nature of the natural numbers.

$$S(n) = n + 1$$

using our basic understanding of numbers where a number is a string of ones

$$\begin{aligned} S(1) &= 1 + 1 = 11, \\ S(11) &= 11 + 1 = 111, \\ S(111) &= 111 + 1 = 1111, \dots \end{aligned}$$

## Relative Size

$n = m$ :  $n$  is in the same place in the sequence of numbers as  $m$  — equality relation.

$n < m$ :  $n$  comes before  $m$  in the sequence of numbers — less than relation.

$n > m$ :  $n$  comes after  $m$  in the sequence of numbers — greater than relation.