# Vocabulary: Arithmetic and Geometric Sequences

## Vocabulary

- Arithmetic sequence – a sequence in which the difference between any two consecutive terms is the same.
  - For example, 2, 6, 10, 14, … is an arithmetic sequence.
- Common difference – the difference between consecutive terms in an arithmetic sequence.
  - For example, the arithmetic sequence 2, 6, 10, 14, … has a common difference of 4.
- Common ratio – the ratio of consecutive terms in a geometric sequence.
  - For example, the geometric sequence 1, 3, 9, 27, … has a common ratio of 3.
- Explicit formula – an equation that can be used to directly calculate any term in a sequence.
  - The explicit formula for an arithmetic sequence is $a_n = a_1 + (n - 1)d$, where $a_n$ is the $n^{th}$ term, $a_1$ is the first term, and $d$ is the common difference.
  - The explicit formula for a geometric sequence is $a_n = a_1 \cdot r^{n-1}$, where $a_n$ is the $n^{th}$ term, $a_1$ is the first term, and $r$ is the common ratio.
- Geometric sequence – a sequence in which the ratio of any two consecutive terms is the same.
  - For example, 1, 3, 9, 27, … is a geometric sequence.
- Sequence – an ordered list of numbers.
  - Each number in a sequence is called a *term*.