Vocabulary: Arithmetic Sequences

📖 Vocabulary

- Arithmetic sequence – a sequence in which the difference between consecutive terms is constant.

  - For example, the sequence 3, 8, 13, 18, … is arithmetic because the difference between any pair of consecutive terms is 5.

  - An arithmetic sequence is sometimes called an *arithmetic progression*.

- Common difference – the difference between any two consecutive terms in an arithmetic sequence.

- Explicit formula – a rule that allows direct calculation of any term in a sequence.

  - In general, the nth term in an arithmetic sequence is given by: $a_n = a_1 + (n - 1)d$, where a_1 is the first term and d is the common difference.

  - The nth term of the sequence 3, 8, 13, 18, … is described by the explicit formula $a_n = 3 + (n - 1)5$.

- Recursive formula – a rule that allows you to find a term in a sequence, based upon the previous term.

  - In general, the recursive formula for the nth term of an arithmetic sequence is defined by the first term, a_1, and the recursive rule, $a_n = a_{n-1} + d$.

  - The sequence 3, 8, 13, 18, … is recursively given by: $a_1 = 3$ and $a_n = a_{n-1} + 5$.

- Sequence – an ordered list of numbers.

- Term – a number or item in a sequence.