

Sequences

Key Vocabulary

Linear or an arithmetic sequence — A sequence where the difference between terms is constant (the same)

Geometric sequence — A sequence where you multiply or divide the previous term by a given amount

Term — Each number in a sequence

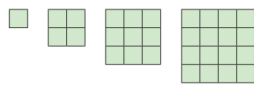
Term to term rule — the difference between each term. It can be a positive or a negative value.

Position to term rule — the algebraic rule of a sequence where you can find any term by substituting the position number into the formula.

Examples of non-linear sequences

Square numbers

1, 4, 9, 16, 25



Triangular numbers

1, 3, 6, 10, 15



Fibonacci sequence

1, 1, 2, 3, 5, 8, 13

Add together the
previous two terms

Finding a term from a position to term rule

Position to term rule = $4n + 3$

1st term = $4 \times 1 + 3 = 7$

2nd term = $4 \times 2 + 3 = 11$

3rd term = $4 \times 3 + 3 = 15$

4th term = $4 \times 4 + 3 = 19$

10th term = $4 \times 10 + 3 = 43$

50th term = $4 \times 50 + 3 = 203$

Position to term rule

6, 10, 14, 18



+4 +4 +4

So we know it has something to do with the 4 times table as the term to term rule is 4.

However, it doesn't start on 4, so we need to add on two to make it start on 6.

$4n + 2$ (n is whatever position you are trying to find)