



Year 7 Knowledge Organiser

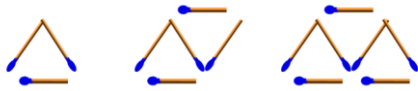
SEQUENCES



Key Concept

Types of Sequence

Sequence as pictures:



Linear sequence:

4, 7, 10, 13, 16, ...

(Arrows show +3 between terms)

Fibonacci sequence:

(add the previous two terms)

1, 1, 2, 3, 5, 8, ...

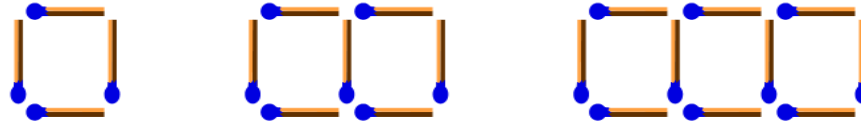
Key Words

Sequence: A list which is in a particular order following a pattern.

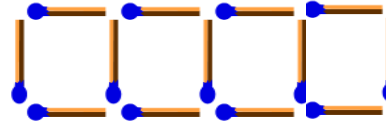
Term: Each particular part of a sequence.

Linear sequence: A sequence which is formed by adding or subtracting the same amount each time.

Examples



Next pattern is:



Sequence = 4, 7, 10, 13, ...

Term to term rule = + 3

Nth term $4, 7, 10, 13, 16, \dots = 3n + 1$

(Arrows show +3 between terms, and a blue arrow shows +1 for the first term)



Clip Numbers

196 - 198, 261

Tip

If a sequence is decreasing, the 'n' term will be negative.

Eg, 15, 11, 7, 3, ...

Nth term = $-4n + 19$

Questions

1) Find the next two terms and the term to term rule

a) 9, 13, 17, 21, ... b) 7, 12, 17, 22, ... c) 9, 7, 5, 3, ... d) 3, 4, 7, 11, 18

2) Find the nth term a) 7, 9, 11, 13, ... b) 8, 13, 18, 23, ...

c) 15, 12, 9, 6, ... d) 1, -3, -7, -11, ...

ANSWERS: 1) a) 25, 29 Rule = +4 b) 27, 32, Rule = +5 c) 1, -1, Rule = -2 d) 29, 47, Rule = add previous 2 numbers 2) a) $2n + 5$ b) $5n + 3$ c) $-3n + 18$ d) $-4n + 5$