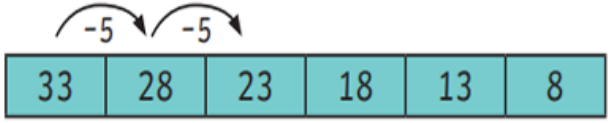
Year 6 Algebra

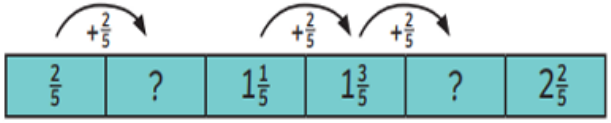
Key Vocabulary
term to term rule
variable
unknown
expression
equation
formula
one-step question
two-step question
substitution
pairs of unknown
enumerate
inch
ounce
pound
stone
pint
gallon

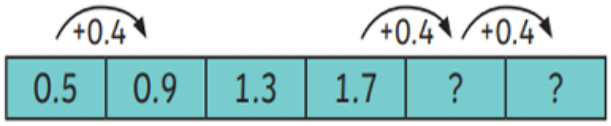
Linear Number Sequences

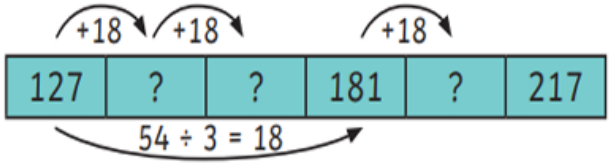
A linear number sequence is a sequence where each value increases or decreases by the same amount each time. Each number in a linear number sequence is called a **term**. The constant change between each number is called the term to term rule. To identify the **term to term rule**, find the difference between two adjacent terms.

When you know the term to term rule, you can use it to find the next number in the sequence. It can also be used to find a missing number within a sequence.









Forming Expressions

An expression is a group of numbers, letters and operation symbols.

Add 14 to a	$a + 14$
Subtract 20 from b	$b - 20$
Multiply c by 4	$4c$
12 more than d	$d + 12$
Multiply e by 3 and subtract 5	$3e - 5$
Add 12 to f and then multiply by 2	$2(f + 12)$

Forming Equations

$a + 14 = 20$

$b - 20 = 15$

$4c = 28$

$d + 12 = 30$

$3e - 5 = 10$

$2(f + 12) = 44$

An equation is a number statement with an equal sign (=). Expressions on either side of the equal sign are of equal value.

Formulas/Formulae

(The word formula has two possible plural forms, formulae and formulas.)

A formula is a special type of equation that shows the relationship between different substituted variables. Formulas are often used in geometry to find area and volume.

Area of triangle = (base × height) ÷ 2

Area of rectangle = length × width

(12.5 × hours worked) + 25 = cost of job

Equations with Pairs of Unknowns

In an equation with two unknown numbers, there may be **several** possible values for the unknowns that will balance the equation.

$ab = 18$

a	b
1	18
2	9
3	6
6	3
9	2
18	1

$2a + b = 10$

a	b
2	6
3	4
4	2
5	0

Enumerating Possibilities

Enumerating means making a complete list of answers to a problem.

- Use a system for finding the possibilities.
- Organise your findings in an ordered list or table.
- Have a way of deciding when all possibilities have been found.

There are four ice cream flavours.

Two scoops of two different flavours give six possible combinations.

- chocolate and strawberry
- chocolate and vanilla
- chocolate and mint
- strawberry and vanilla
- strawberry and mint
- vanilla and mint

Solving One-Step and Two-Step Equations

In algebra, missing numbers in equations are represented by letters. Any letter can be used but often the letter x is used. An algebraic x is written to look different to a normal letter 'x' to avoid confusion.

The multiplication sign is not used in algebra to avoid confusing it with the algebraic x used to show a missing number. Inverse operations are used to isolate the letter on one side of the equation.