

Grade 6 - Writing and Reading Algebraic Expressions - Lesson

Common Core 6.EE.A.2a, 6.EE.A.2b · maths-pdf.fr/en/

An algebraic expression combines numbers, variables, and operations. Key words show the operation: sum means add, less than means subtract, product means multiply, and quotient means divide. A term is a part that is added, a coefficient multiplies a variable, and $3(x + 5)$ is the product of 3 and a sum.

Grade 6 · Common Core State Standards: **6.EE.A.2a**, **6.EE.A.2b**

Key facts

- Sum, plus, more than: add. Difference, less than, decreased by: subtract.
- Product and times: multiply; quotient and divided by: divide.
- A term is a part of an expression separated by plus or minus signs.
- A coefficient is the number multiplied by a variable; a constant has no variable.
- Read an expression in parentheses as one quantity.

How do you write expressions from words?

An **algebraic expression** uses numbers, variables, and operations. A variable is a letter that stands for a number. Key words tell you which operation to use.

Words	Expression
the sum of x and 7	$x + 7$
y decreased by 5	$y - 5$
6 times n	$6n$
m divided by 4	$m / 4$
8 less than k	$k - 8$

Key phrases and the operations they name.

Watch the order for *less than* and *decreased by*. "8 less than k " means $k - 8$, not $8 - k$.

Parts of an expression

A **term** is a number, a variable, or a product of numbers and variables. A **coefficient** is the

number multiplied by a variable. A **constant** is a term with no variable. **Factors** are numbers or expressions that are multiplied.

What are terms, coefficients, and factors?

In $7x+3$, the terms are $7x$ and 3 . The coefficient of x is 7 and the constant is 3 .

Part	Name
$7x$	term
7	coefficient
x	variable
3	constant

The expression $7x + 3$ has two terms.

How do you read an expression as one thing?

Treat a group in parentheses as one quantity. The expression $3(x+5)$ is the *product* of 3 and the *sum* $x+5$. It is different from $3x+5$, which is the sum of $3x$ and 5 .

$3n + 2$	n	n	n	2
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The expression $3n + 2$ is three groups of n plus 2 .

$2(n + 5)$	n	5	n	5
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The expression $2(n + 5)$ is two groups of the sum $n + 5$.

1. Underline the operation words.
2. Write each quantity as a number or variable.
3. Use parentheses when a sum or difference is multiplied.
4. Read the expression back in words to check.

Expressions also model rates. If a bus ride costs \$2.50 for each trip, then $2.5t$ gives the cost for t trips. When $t = 4$, the cost is $2.5 \times 4 = 10$ dollars. Writing the rule as an expression lets you find the cost for any number of trips without drawing a new picture each time. Always say what the variable stands for, such as "t is the number of trips." That sentence makes your expression easy to check.

Example: A gym costs \$20 to join and \$15 per month. For m months the cost is $15m+20$. Here $15m$ is the monthly cost and 20 is the one-time fee.

Questions about writing and reading algebraic expressions

What is an algebraic expression?

An algebraic expression has numbers, variables, and operations but no equals sign, such as $3n + 2$.

What is the difference between a term and a factor?

Terms are added or subtracted, and factors are multiplied. In $3x + 5$, the terms are $3x$ and 5 ; in $3x$, the factors are 3 and x .

How do you write "8 less than k"?

Write $k - 8$. The number 8 is taken away from k , so k comes first.

What is a coefficient?

A coefficient is the number multiplied by a variable. In $9z + 4$, the coefficient is 9 .

How do you know when to use parentheses?

Use parentheses when a sum or difference is multiplied by something. Twice the sum of n and 3 is $2(n + 3)$, not $2n + 3$.