

I should already know:

- How to apply the 4 operations to integers
- How numbers work below 0

I will learn:

To represent negative numbers

To add and subtract negative numbers

To multiply and divide negative numbers

To recognise and describe number patterns

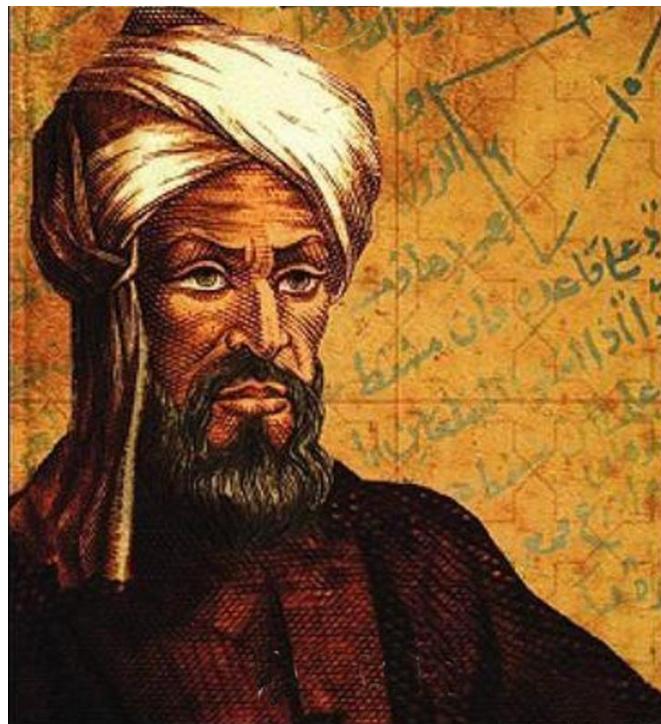
To substitute into and solve expressions and equations

This will help in the future:

Developing a sense of algebra allows the true power of maths to be uncovered. Algebra allows calculations to be generalized so that maths can solve problems

Key Words

Variable	A letter used to represent an unknown number e.g. x
Term	Each part of an expression e.g. $2x$; 4 ; x^2
Expression	A mixture of numbers and letters e.g. $2x + 5$
Equation	Two expressions equal to one another e.g. $2x + 5 = 10$
Solve	Find the value of the variable



*Muhammad ibn Mūsā al-Khwārizmī, whose book *al-Kitāb al-mukhtaṣar fī ḥisāb al-jabr wal-muqābala* is the origin of the word algebra*

Greater Depth Challenge

Can you use algebra to explain areas of maths that you have studied before?

Further Reading

Hegarty Maths



Knowledge Organiser Focus:

Negative numbers, sequences and algebra

Unit 4 – negative numbers

No	Question	Answer
4.1	What is a positive number?	Any number greater than zero
4.2	What is a negative number?	Any number smaller than zero
4.3	What does the sign of a number mean?	The sign of the number tells you if the number is positive or negative
4.4	What happens to the sign when you multiply by a positive number?	The sign stays the same as the original number
4.5	A positive x a positive is a...	Positive
4.6	A negative x a positive is a...	Negative
4.7	What happens to the sign when you multiply by a negative number?	The sign changes so that it is the opposite of the original number
4.8	A positive x a negative is a...	Negative
4.9	A negative x a negative is a...	Positive

Unit 5 - equations

No	Question	Answer
6.1	What is a variable?	A letter used to represent an unknown number e.g. x
6.2	What is a term?	Each part of an expression e.g. 2x; 4; x^2
6.3	What is the constant?	The number on its own
6.3	What is an expression?	A mixture of numbers and letters e.g. $2x + 5$
6.4	What is an equation?	Two expressions equal to one another e.g. $2x + 5 = 10$
6.5	What is a coefficient?	The number in front of the variable e.g. 2x (2 is the coefficient of x)
6.6	What does substitute mean?	Replace the variable with a number
6.7	What does solve mean?	Find the value of the variable
6.8	What are like terms?	Terms that have the same letter and same index e.g. $2x^2$ and $5x^2$
6.9	What does simplify mean?	Collect the like terms e.g. $2x^2 + 5x^2 = 7x^2$
6.10	What is the nth term?	An algebraic expression giving the rule to find any number in a sequence
6.11	What is the term (in a sequence)?	The numbers in a sequence
6.12	What does consecutive mean?	Next to e.g. 5 and 6 are consecutive
6.13	What is a linear sequence?	A sequence that increases or decreases by the same amount between terms
6.14	What is the common difference?	The difference between any two consecutive terms



Knowledge Organiser Focus:

Negative numbers, sequences and algebra

Unit 4 – negative numbers

No	Question	Answer
4.1	What is a positive number?	
4.2	What is a negative number?	
4.3	What does the sign of a number mean?	
4.4	What happens to the sign when you multiply by a positive number?	
4.5	A positive x a positive is a...	
4.6	A negative x a positive is a...	
4.7	What happens to the sign when you multiply by a negative number?	
4.8	A positive x a negative is a...	
4.9	A negative x a negative is a...	

Unit 5 - equations

No	Question	Answer
6.1	What is a variable?	
6.2	What is a term?	
6.3	What is the constant?	
6.3	What is an expression?	
6.4	What is an equation?	
6.5	What is a coefficient?	
6.6	What does substitute mean?	
6.7	What does solve mean?	
6.8	What are like terms?	
6.9	What does simplify mean?	
6.10	What is the nth term?	
6.11	What is the term (in a sequence)?	
6.12	What does consecutive mean?	
6.13	What is a linear sequence?	
6.14	What is the common difference?	