

## Number properties

Equations	Here is a description of what is happening with these number operations and numbers.	Here are other equations	We call this number 'behaviour':
$2 \times 13 = 26$ <b>or</b> $13 \times 2 = 26$			
$26 + 28 = 54$ <b>or</b> $28 + 26 = 54$			
$2 \times (13 + 14) = 54$ so $2 \times 27 = 54$ <b>or</b> $(2 \times 13) + (2 \times 14) = 54$ so $26 + 28 = 54$			
$(28 + 26) + 24 = 78$ so $54 + 24 = 78$ <b>or</b> $28 + (26 + 24) = 28 + 50$ so $28 + 50 = 78$			
$(2 \times 4) \times 3 = 24$ so $8 \times 3 = 24$ <b>or</b> $2 \times (4 \times 3) = 24$ so $2 \times 12 = 24$			

## Number properties: Teacher notes

Equations	Here is a description of what is happening with these number operations and numbers.	Here are other equations	We call this number 'behaviour':
$2 \times 13 = 26$ <b>or</b> $13 \times 2 = 26$	<p>"It doesn't matter if the numbers are swapped around when you multiply them. It's still equal to the same thing."</p> <p>Two numbers are multiplied in either order and you get the same product.                      (This is called the commutative property of multiplication because when <math>a \times b = b \times a</math> we say a and b 'commute' with each other.)</p>	$4 \times 3 = 12$ or $3 \times 4 = 12$	The commutative property of multiplication
$26 + 28 = 54$ <b>or</b> $28 + 26 = 54$	<p>"It doesn't matter if the numbers are swapped around when you add them. It's still equal to the same thing. The sentence still balances"</p> <p>Two numbers are added in one order and when you change the order and add the same numbers you still get the same sum.                      (This is called the commutative property of addition because when <math>a + b = b + a</math> we say a and b 'commute' with each other.)</p>		The commutative property of addition.
$2 \times (13 + 14) = 54$ so $2 \times 27 = 54$ <b>or</b> $(2 \times 13) + (2 \times 14) = 54$ so $26 + 28 = 54$	<p>You can multiply a sum, or you can 'multiply each addend of that sum separately, and the products will be the same.</p> <p>(This is called the distributive property because you are distributing something as you separate it or break it into parts.)</p>		The distributive property of multiplication over addition.
$(28 + 26) + 24 = 78$ so $54 + 24 = 78$ <b>or</b> $28 + (26 + 24) = 28 + 50$ so $28 + 50 = 78$	<p>"When you add three numbers it doesn't matter if you start with the first pair or the last pair."</p> <p>You can group numbers together in any way, add them together, and the sum will be the same.                      (This is called the associative property because the numbers can be grouped (or 'associated') in different ways, but the same sum results.)</p>	$(14 + 14) + (13 + 13) = 54$ or $(14 + 13) + (14 + 13) = 54$	The associative property of addition
$(2 \times 4) \times 3 = 24$ so $8 \times 3 = 24$ <b>or</b> $2 \times (4 \times 3) = 24$ so $2 \times 12 = 24$	<p>"When you multiply three numbers it doesn't matter if you start with the first pair or the last pair."</p> <p>You can group numbers in any way, multiply them together, and the product is the same.                      (This is called the associative property because the numbers can be grouped (or 'associated') in different ways, but the same product results.)</p>		The associative property of multiplication