Consider, for example, the product of the multiplier $-2x^2$ and the quantity $(4x^3 - 3x)$. As a product, this looks like $-2x^2(4x^3 - 3x)$. The terms in the quantity are $+4x^3$ and $-3x$.

The step-by-step process is this:

$-2x^2(4x^3 - 3x)$	Distribute $-2x^2$ to each term in the quantity. Treat $- 3x$ as $-3x$.
$= (-2x^2)(4x^3) + (-2x^2)(-3x)$	Notice that the original minus sign now appears as part of the $-3x$ term.
$= -2 \cdot 4 \cdot x^{2+3} + (-2) \cdot (-3) \cdot x^{2+1}$	
$= -8x^5 + (+6x^3)$	This step is not necessary, but it emphasizes the multiplication of two negative coefficients: $(-2)(-3) = +6$.
$= -8x^5 + 6x^3$	Notice that the signs of this binomial are different from the original quantity, $(4x^3 - 3x)$ because the multiplier, $-2x^2$, is negative.

We can check this result to see if we multiplied correctly. Replace x with 1:

Original Product $\overset{?}{=}$ **Answer**

$$-2(4 - 3) \overset{?}{=} -8 + 6$$

$$-2(1) \overset{?}{=} -2$$

$-2 = -2$ ✓ True   Now mentally check the exponents for accuracy.

It's possible to distribute in fewer steps, as demonstrated here:

Think of $-2x^2$ being distributed to each term:

$- 8x^5$ $+ 6x^3$

$$-2x^2(4x^3 - 3x)$$

$-2x^2(4x^3 - 3x)$ Treat $4x^3$ as $+4x^3$ and $- 3x$ as $-3x$.

$(-2x^2)(+4x^3) = -8x^5$; $(-2x^2)(-3x) = +6x^3$, or *plus* $6x^3$.

$= -8x^5 + 6x^3$

To successfully multiply in one step, be aware of

i) the signs of the terms being multiplied, and

ii) the sign of the resulting product.