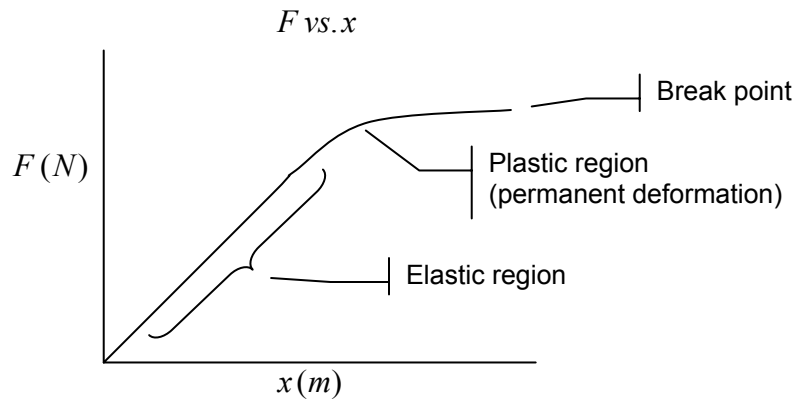


Robert Hooke –1678

Hooke's Law applies to objects that have **elastic** properties such as rubber bands and springs.

For an object to be elastic, it must return to its original shape after being stretched or compressed.



Where F is the force in Newtons and x is the amount of deformation of the elastic material. In the case of springs, the amount of compression or extension (stretch)

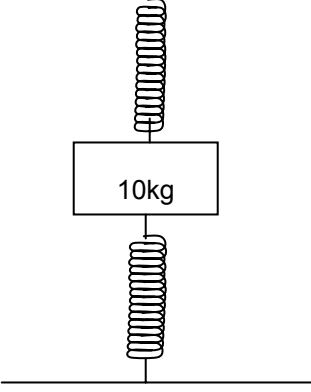
$$F = kx$$

Compression	= negative values of x and F
Extension	= positive values of x and F
k	= is a constant (N/m)

Example 1

A 108kg man stands on a scale. How far will the scale compress if $k = 2.33 \times 10^5 \text{ N/m}$?

Example 2 - Find x_b if the system is in equilibrium

Given	RTF	Formula
 <p data-bbox="414 304 690 346">$x_a = 0.02\text{m}$, $k = 5000\text{ N/m}$</p> <p data-bbox="414 493 617 535">$x_b = ?$, $k = 200\text{ N/m}$</p>		