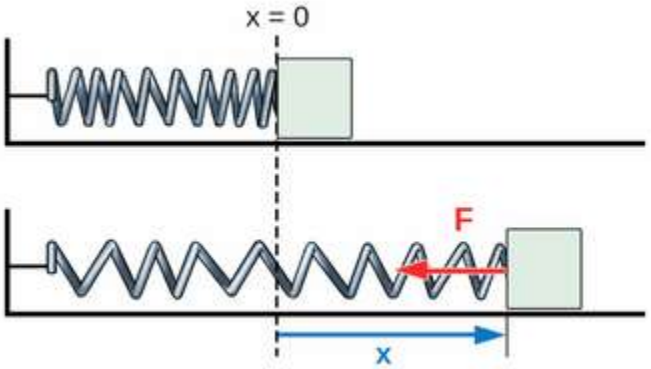
Physics Honors:
Spring Force and Hooke's Law

Spring Force



Hooke's Law

The magnitude of the force exerted by a spring is equal to the spring constant times the distance the spring is stretched or compressed from its equilibrium position

$$F_s = -kx$$

F = Force (Newtons)

K= Spring constant (N/m)

X = Distance from equilibrium (meters)

Hooke’s Law Practice Problems

What is the spring constant of a spring that stretches 12cm when an object weighing 24 N is hung from it?

How much force is required to compress a spring with k = 144 N/m a distance of 167cm?

Elastic Limit

There is a point where springs will no longer follow hooke’s law. If they are stretched too far, they won’t return to their original shape. This distance is called the elastic limit