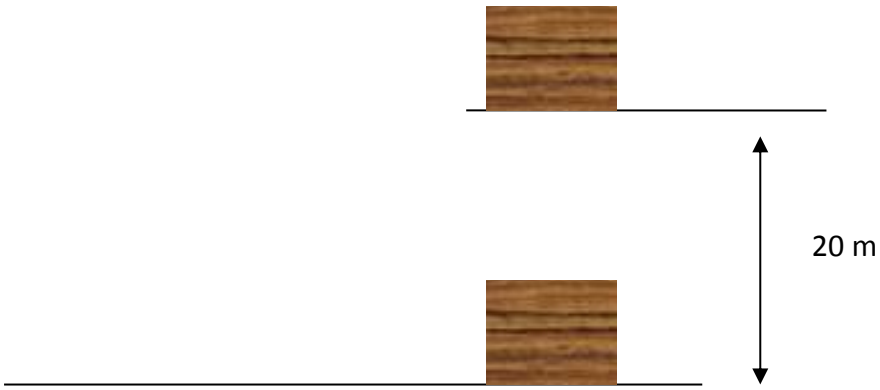
N5

Gravitational Potential Energy

Gravitational potential energy is the work done against gravity.



The 2 kg box has to be lifted up 20 m onto the shelf above it. The work done against gravity can be calculated using **E_w = F x s.**

Where, F = weight of the box = m x g = 2 x 9.8 =**19.6 N**

s = the height = **19.6 m**

E_w = the change in gravitational potential energy, ΔE_p

Therefore an equation more relevant to the problem can be written:

Change in Potential energy = **mass x gravitational field strength x height**

Δ Ep = m x g x h

= 2 x 9.8 x 19.6

= 384.16 J