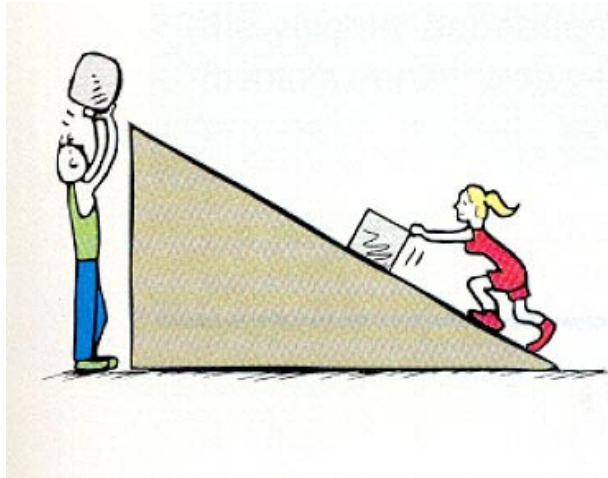# Potential Energy

1. Potential energy is energy associated with forces that depend on position or configuration, it is stored energy. The most common is gravitational potential energy.

$$PE = mgh$$

Both blocks acquire the same gravitational potential energy, mgh. The same work is done on each block. What matters is the final elevation, not the path followed.

2. When lifting an object the work done on the object is equal to the change in potential energy of the object.

$$W = \Delta PE = PE_2 - PE_1$$

3. The work done by gravity is $W_G = - mgh = -\Delta PE$ since W_G acts against the lifting force.

Example: #30 page 175: A 6.0kg monkey swings from one branch to another 1.2m higher. What is the change in PE?

$$\Delta PE = PE_2 - PE_1$$
$$= mgh_2 - mgh_1$$
$$mg(h_2 - h_1)$$
$$(6.00kg)(9.80m/s^2)(1.20m) = 70.6J$$