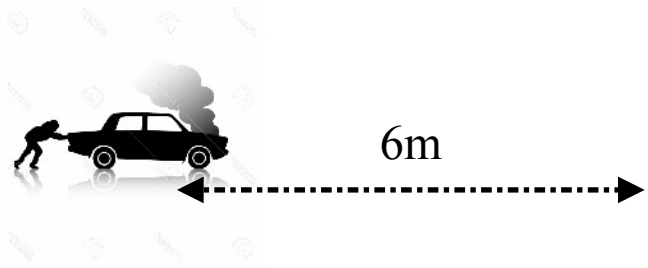
Work Done

When a force moves an object we say that energy has been transferred to that object.

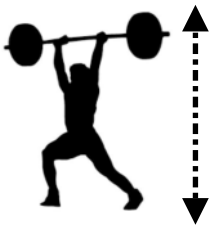
$$E_w = Fd$$

In physics we say WORK has been done on the object.

A man pushes a broken down car with a force of 200 Newtons for a distance of 6 metres.



A weightlifter lifts a 100 kg barbell 2 metres from the ground.



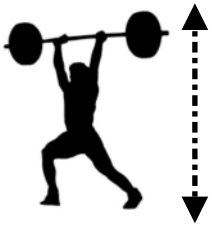
A car is travelling with constant speed along a road.

The forward force is 2500 N

The force of friction is_____

Calculate the work done by the car against friction

Potential Energy and Kinetic Energy



When an object has been lifted up the work done on it is transferred to potential energy.

The potential energy can be found by using:

$$E_p = mgh$$

https://goo.gl/XQtcrc

When the object falls from the height its potential energy is changed into energy of movement.

Energy of movement is called kinetic energy and can be found from this equation:

$$E_k = \frac{1}{2}mv^2$$

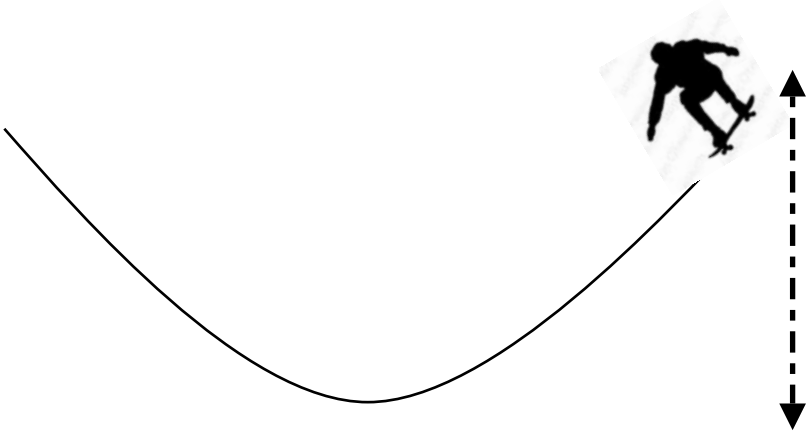
A car has a mass of 2,500 kg. Calculate its kinetic energy when it is travelling at 15 ms^{-1}

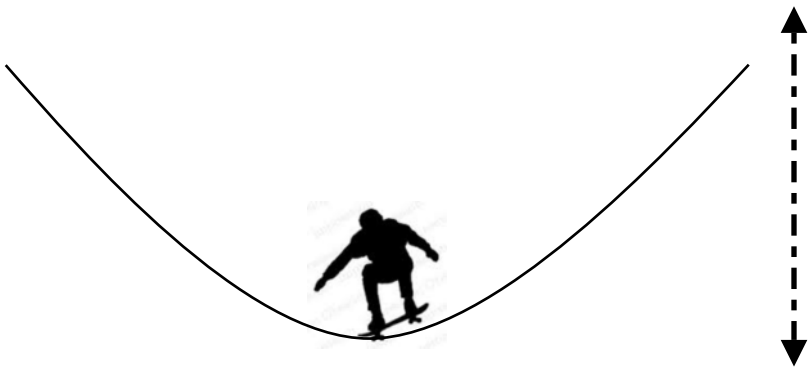
https://goo.gl/ofviJ1

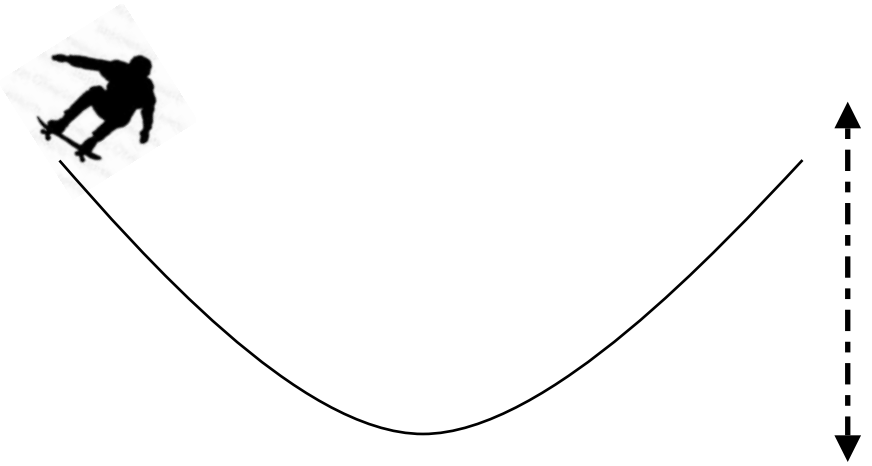
If the speed is doubled what happens to the kinetic energy?

Potential Energy and Kinetic Energy

https://goo.gl/7Kwu0h

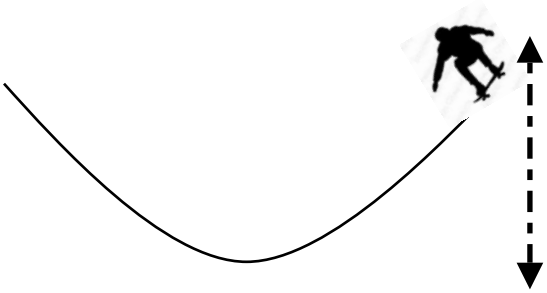


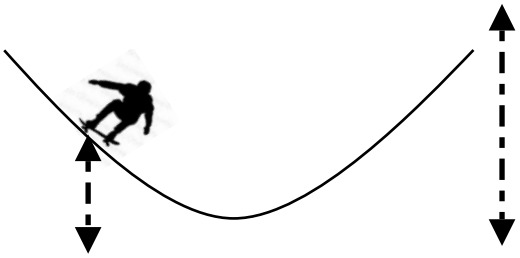




Potential Energy and Kinetic Energy

http://goo.gl/BDJiLj





Energy is lost in overcoming friction.
Or work is done in overcoming friction.