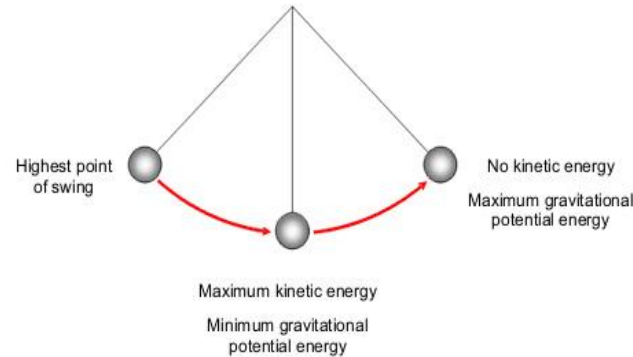


Physics: Energy, Work and Power

Key word	Definition
Energy	Comes in different forms e.g. light, heat, electricity.
Work done	Work done = energy transferred. This requires a force.
Power	The rate of energy transfer.
Force	A push or a pull.

The Law of Conservation of Energy:

Energy Cannot be created or destroyed only transferred between one type and another.



The Pendulum

The obeys the law of conservation of energy because it continually transfers energy between kinetic and gravitational potential. It will eventually stop swinging because the force of air resistance will transfer its kinetic energy to thermal and sound in the air.

TYPES OF ENERGY

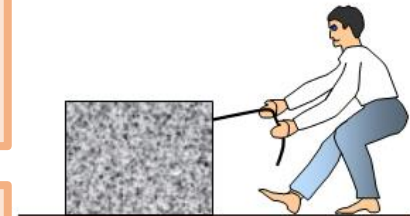


Types of energy

Energy	Example of machine/store
light	Light Bulb
thermal	Bunsen Burner
electrical	TV
kinetic	Car
sound	Radio
chemical	Food/batteries
nuclear	Nuclear fission/fusion
Gravitational potential	Aeroplane
Elastic potential	Stretched spring

Work done

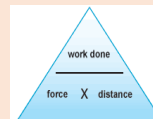
If someone uses a force to pull a block they are transferring kinetic energy to it, so work is being done on the block. The further it is pushed the more work is done on the block.



Key Equation

$$\text{Work done} = \text{Force} \times \text{distance moved}$$

Work done is measured in joules (J)
 Force is measured in Newtons (N)
 Distance moved is measured in metres (m)



Power

If the block is being pulled quicker then energy is being transferred to it at a faster rate and the person will be more worn out because this requires more power.



Key Equation

$$\text{Power} = \frac{\text{Energy transferred}}{\text{time}} = \frac{\text{work done}}{\text{time}}$$

Power is measured in Watts (W)
 Energy transferred (or Work done) is measured in joules (J)
 Time is measured in seconds (s)

