

① Energy

↳ Definition: Capacity to do work.

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SYMBOL
E

E_k Kinetic energy

E_p potential energy

E_g Gravitational energy

② Types of energy stores

↳ "contains" of energy

↑
energy is stored inside the energystore.

∴ energy is transferred from one store to another.

Example

"energy in the kinetic store"

~~kinetic energy~~

③ Energy in the ___ store

① Kinetic store → energy a body possesses due to its motion.

Formula to find it:

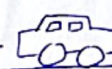
$$\frac{1}{2} (m)(v^2)$$

↑ v = speed of the object (m/s)
↑ m = mass of the object (kg)

Example

200 kg
80 km/h

$E_k = ??$



Symbol
 E_k

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∴ Factors that affect E_k :

- ① mass
- ② velocity (speed) of the object.

* as mass/velocity increases, E_k increases.

② Gravitational Potential Store

↳ energy a body possesses due to its position above the ground.

↳ all objects elevated above the ground possess energy in the gravitational potential store.

Example

cat: 40 kg
2m

* ON EARTH: $g = \sim 10 \text{ N/kg}$

$E_p = ??$



Formula:

$$mgh$$

↑ h = height above ground (m)
↑ g = gravitational field strength (N/kg)
↑ m = mass of object (kg)

Symbol
 E_p

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Factors affecting E_p :

- ① mass
- ② gravitational field strength
- ③ height above ground

as these go up, E_p goes up too.