

Name _____

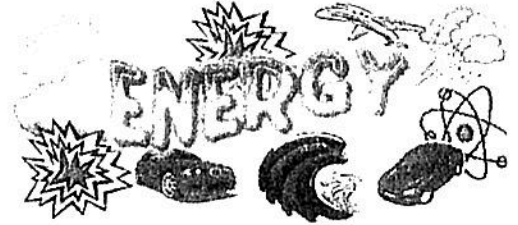
Date 1-2-18

Aim: I can describe the two types of energy.

Now:

Notes:

Energy:

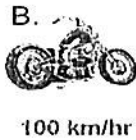


- An 1. agent of change.
- Capacity to do 2. work.
- Measured in 3. joules.
- All forms of energy exist as 4. Kinetic or 5. potential.

Kinetic Energy: On the Move

- Energy in the form of 6. motion.
- The greater the 7. mass and 8. velocity of a moving object, the greater the kinetic energy.

Examples: Which has a greater kinetic energy?



Answer



Answer

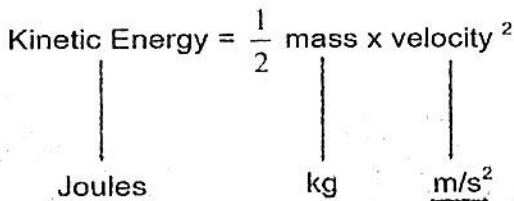
List the vehicles in order of increasing kinetic energy.



- B
- C
- A

Calculating Kinetic Energy

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



Calculating Kinetic Energy

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

A girl and her dog are running. The dog has a mass of 20 kg. The girl has a mass of 60 kg. Suppose both the dog and the girl run at a velocity of 2 m/s. Calculate their kinetic energies.

Kinetic Energy of dog: $KE = \frac{1}{2}mv^2 = \frac{1}{2}(20kg)(2m/s)^2 = 40J$

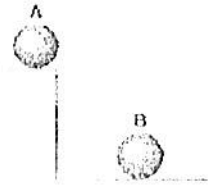
Kinetic energy of girl: $KE = \frac{1}{2}mv^2 = \frac{1}{2}(60kg)(2m/s)^2 = 120J$

Potential Energy: Ready and Waiting

- 9. stored Energy
- Depends upon its 10. position (height) and 11. condition (mass)

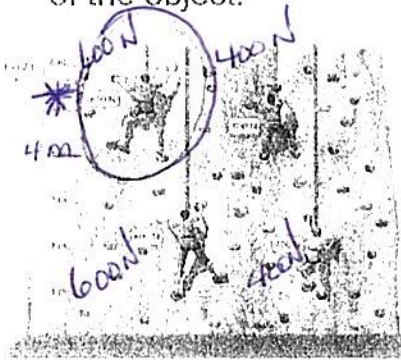
Which has more potential energy? 12. A

which has the potential to fall for the longest period of time.



Gravitational Potential Energy (GPE)

- Potential Energy that depends on the height of the object.



1. Circle the rock climber with the greatest potential energy.

2. Calculate the rock climber's GPE. The height to be used is at the rock climber's lowest foot.

$$\text{GPE} = \text{Weight} \times \text{Height}$$

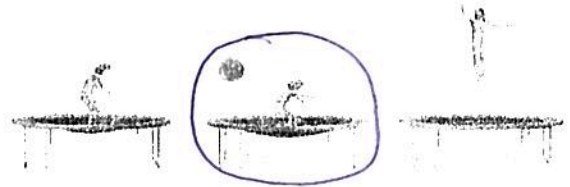
$$\text{GPE} = 600\text{N} \times 4\text{m}$$

$$\text{GPE} = 2400\text{ J}$$

Gravitational Potential Energy is measured in Joules
Just like work!

Elastic Potential Energy (EPE)

- Potential Energy is the energy associated with objects that can compressed or stretched.
- The energy in a stretched object, such as in the trampoline is EPE.



Shade in the circle of the trampoline that has the greatest EPE.