Kinetic Energy

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Mechanical Energy

Mechanical energy is the combination of kinetic and potential energy

- Kinetic Energy (KE)
- Energy of Motion

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

- KE is in Joules (J)
- Mass in kg
- Velocity in m/s
- Objects must be in motion to have KE.

Kinetic Energy

- Who has the most KE?
  - A motorcycle or a car both traveling 19 m/s?
  - Who has most KE? Why?

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

Kinetic Energy

- Who has the most KE?
  - A bowling ball rolled slow or the same bowling ball rolled fast?

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

KE Calculations

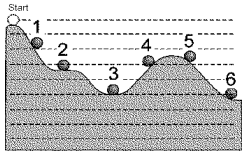
$KE = \frac{1}{2} mv^2$ $\quad m = \frac{2KE}{v^2}$ $\quad v = \sqrt{\frac{2KE}{m}}$

- 8) What is the KE of a 4kg rock rolling 10 m/s?
- 5) A bowling ball is traveling at 2.0 m/s and has 16 J of KE. What is the mass of the bowling ball?

KE Calculations

$KE = \frac{1}{2} mv^2$ $\quad m = \frac{2KE}{v^2}$ $\quad v = \sqrt{\frac{2KE}{m}}$

- 6) Calculate the velocity of a 2.0 kg rock. Just before it hits the beach it has 235.2 J of Energy?

Kinetic Energy

- Kinetic energy calculations…
- The ball accelerates down the hill.