

Name _____

Factors Influencing Kinetic Energy: What Makes Things Move?

Short Answer Key

1. Kinetic energy is the energy an object possesses due to its motion. It is essential in our daily lives because it governs how fast objects move and how much force they can exert.
2. The mass of an object directly affects its kinetic energy. A heavier object moving at the same speed has more kinetic energy than a lighter object.
3. Speed and kinetic energy are directly proportional; as speed increases, kinetic energy also increases. For example, a speeding car has more kinetic energy than a car moving at a slow pace.
4. The direction of motion can impact kinetic energy because kinetic energy depends on speed, which has a direction. For instance, a car moving north and a car moving south with the same mass and speed possess the same kinetic energy, but their directions are different.
5. $KE = 0.5 \times 800 \text{ kg} \times (25 \text{ m/s})^2 = 250,000 \text{ J (joules)}$

