

Use the information below to answer the questions that follow.

Mechanical Kinetic Energy (KE)

The formula shown here is the mathematical relationship between an object's mechanical kinetic energy and its mass and velocity. The term *velocity* refers to the speed that something is moving in a specific direction.

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

Quantity	Symbol	SI unit
mechanical kinetic energy	E_k	J (joule)
mass	m	kg (kilogram)
velocity*	v	$\frac{m}{s}$ (metres per second)

* Velocity is squared in the calculations for mechanical kinetic energy.

1. What does the symbol E_k stand for?

2. What are the SI units for the quantity in question 1?

3. What would you need to do to a mass of 100 g before you could use it in the equation for mechanical kinetic energy?

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4. What is velocity?

5. What are the SI units for velocity?

6. What would you need to do to a velocity of 10 km/h before you could use it in the equation for mechanical kinetic energy?