

Notes Energy

Introduction to Mechanical Energy

What do you think of when you see or hear the word energy? A toddler running around like a crazy person?

Someone running a triathlon? A basketball team running up and down the court? You're right — these all use energy.

However, energy occurs in far more places than just athletic events and hyper children. It's probably easier to describe what energy does rather than what energy is. Energy is a property of matter, and all matter has it. Whenever a light bulb is lit, a ham is cooked in the oven, your favorite band plays a concert, a fan spins, a backpack falls to the ground, or a fire burns, you can be sure that energy — in one form or another — made it happen.

Energy comes in many different forms and can be transferred from one object or system to another. For example, the sun can transfer heat energy to the Earth or coal is burned and transfers energy for heat and electricity. According to the law of conservation of energy, energy cannot be created or destroyed. Mechanical energy is the energy an object has because of its motion or position. There are two kinds of mechanical energy: kinetic and potential.

Kinetic energy is the energy an object has because it is moving. The greater the speed and the mass of the object, the greater its kinetic energy. For example, if a lion is chasing a hyena, the lion would have greater kinetic energy because it has more mass. A downhill skier would have a large amount of kinetic energy. In contrast, a golf ball sitting on a tee has zero kinetic energy. The golf ball would be an example of potential energy. Potential energy is the energy an object has because of its position or shape. For example, a rock sitting on the edge of a cliff has potential energy. As the rock falls, that potential energy becomes kinetic energy. What are some other examples of mechanical energy that you can think of?

Mechanical Energy:

↳ Kinetic or Potential Energy associated with the motion or position of an object.

Kinetic Energy:

↳ Energy that an object has due to its motion.

Potential Energy:

↳ The energy that an object has because of its position.

Types:

1. Gravitational PE
2. Elastic PE
3. Chemical PE

KINETIC ENERGY

description	picture	EXAMPLE #1	Example #2
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POTENTIAL ENERGY

description	picture	EXAMPLE #1	Example #2
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Writing Prompt: Describe a time when you have personally experienced kinetic or potential energy in your daily life.

Kinetic Energy: An athlete is running around the track is demonstrating KE.

Potential Energy: At the top of the stairs, I have more PE than at the bottom of the stairs.

Energy in motion



A lion chasing a hyena.

A downhill skier.

Stored energy due to position or shape



A golfball sitting on a tee.

A rock sitting on the edge of a cliff.

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