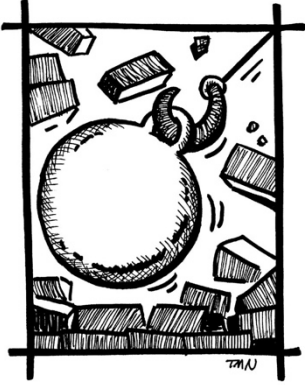


Name _____



The Marvelous Law of Conservation of Energy

Have you ever wondered why a bouncing ball always returns to its original height or why a swinging pendulum never stops swinging on its own? The answer lies in a fundamental law of physics known as the Law of Conservation of Energy. In this exciting journey through the world of energy, we'll explore what this law means and how it applies to kinetic and potential energy.

What is the Law of Conservation of Energy?

The Law of Conservation of Energy states that energy cannot be created or destroyed but can only change from one form to another. This law is like a magical rule that governs how energy behaves in our universe.

The Two Faces of Energy: Kinetic and Potential Energy

- Kinetic energy is the energy of motion. When an object moves, it has kinetic energy.
- Potential energy is stored energy due to an object's position or condition. It's like a coiled spring ready to be released.

Applying the Law to Kinetic Energy

When an object is in motion, it possesses kinetic energy. Imagine a rolling ball. As it moves, its kinetic energy increases. When it stops, its kinetic energy decreases, but the energy doesn't disappear; it's converted into other forms, like heat due to friction.

Applying the Law to Potential Energy

Objects can have potential energy due to their position. For example, a ball held high above the ground has potential energy. When the ball is released, gravity pulls it down, and its potential energy transforms into kinetic energy. At the lowest point, it has maximum kinetic energy and minimum potential energy.

The Beautiful Dance of Energy Conversion

The Law of Conservation of Energy ensures that the total energy of a closed system remains constant. In the case of our bouncing ball, as it bounces, its kinetic energy is converted into potential energy and back again, ensuring it returns to its original height.

