

Energy: Kinetic, Potential & Mechanical

Trimester 1: Change

Exciting Energy

What is energy?

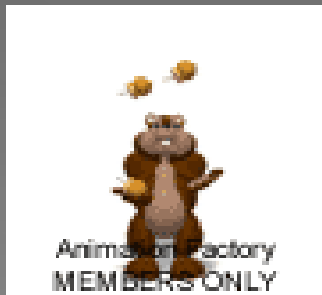


- **Energy** is the ability to cause change.
- You use energy from foods to exercise, move, and even think.
- Nonliving objects also need energy to cause changes, such as movement or giving off light.



What are two types of energy?

- **Kinetic energy** is the energy of motion. All moving objects have kinetic energy.
- The amount of kinetic energy an object has depends on mass and speed.
- The more mass or speed an object has, the more kinetic energy it has.



What are two types of energy?

- **Potential energy** is the stored energy an object has due to its position or chemical composition.
- Gravitational potential energy is caused by the pull of Earth's gravity.
- All objects above the ground have gravitational potential energy.



What are two types of energy?

- Chemical potential energy results from the bonds between atoms.
- If chemical bonds are broken, changes can occur, releasing energy.



How are kinetic and potential energy different?

- Kinetic energy is the energy of motion, but potential energy is stored energy that can be converted into motion.
- Objects can have both kinetic and potential energy at the same time.



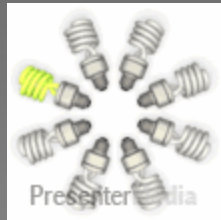
They have kinetic energy because they are moving and they have gravitational potential energy because they are above the ground and continue to fall.



Add It Up!

What is mechanical energy?

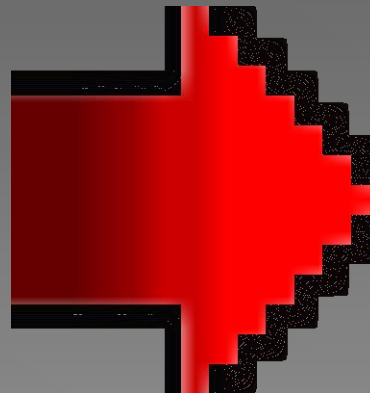
- **Mechanical energy** is the combination of kinetic and potential energy.
- Mechanical energy is the sum of the motion and the position of an object.



What is the law of conservation of energy?

- The **law of conservation of energy** states that energy can neither be created nor destroyed. It can only be transformed.
- If no energy is transformed, the mechanical energy of an object stays the same.

Chemical
Energy



Light
Energy



