

Potential & Kinetic

By Xu Fang Zou

Xu is a junior at Somerville High School

Potential and **kinetic energy** are energy partners. When there is motion, energy is kinetic. When there is not motion but there is just about to be motion, energy is potential.

Kinetic energy is the energy of motion. It is measure by how much work must be done to put an object in motion or to rest.

Potential energy is stored energy. Sometimes potential energy is also called gravitational potential energy because it is mostly determined by gravity.

Throwing a ball into the air is a good example of how kinetic and potential energy work. In this scenario, there is a continuous change from kinetic energy to potential energy.

Imagine a ball lying on the ground without motion. At this point, both kinetic and potential energy are at zero. When the ball is tossed into the air, there is a burst of kinetic energy. As the ball reaches its maximum height, the kinetic energy gets smaller and smaller. Finally it becomes zero. Meanwhile, the potential energy is increasing. As the ball reaches its maximum height, its velocity is zero. Now all the energy in the process is saved as potential energy.

When the ball begins to fall down to the ground, the potential energy is once again gradually converted to kinetic energy. Finally, the ball lands on the ground and becomes motionless.

The energy cycle will begin once more when the ball is picked up and thrown again.