

Kinetic Energy (Sports)

Kinetic Energy is the energy of motion

Potential Energy is the energy stored in a raised weight or a high jumper's body at the peak of a leap, in the food we eat, in the elastic energy of stretched strings of tennis racquet or archer's bow.

Thermal Energy is the kinetic energy of molecules

Whenever energy is transformed from one form to another *work* is done.

When work is done on an object, the object gains speed and acquires kinetic energy. When a player throws a ball, work is done. The arm applies a force to the ball through a distance. When you hit a ball with a bat or racquet, work is done. A runner does work when they accelerate and acquire kinetic energy. Once that kinetic energy is achieved, work continues to be done just to overcome friction and maintain speed.

Energy comes from the food they eat. A lot of the energy is used to keep our bodies warm. An archer pulling back on the bowstring does work stretching the bow and string. The energy stored in the stretched bow and string is called **elastic potential energy** just as the energy stored in a lifted weight is called gravitational potential energy. When the string is released, the potential energy is converted to the **kinetic energy** of the arrow. Elastic potential energy stored in the racquet strings of a tennis player or the golf club's shaft is transferred to the kinetic energy of the ball.