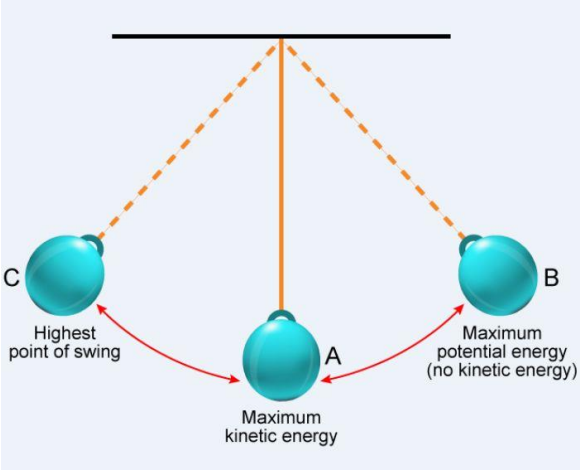
Energy, Work, & Simple Machines

Section 2: Conservation of Energy

Energy can be transformed from one form of energy to another. For example, the electrical energy in a light bulb can be transformed into light energy so that you can see. Electrical energy in a light bulb also transforms into thermal energy, which is why it is warm by the light source.



Mechanical energy is the total amount of kinetic energy and potential energy in a system. It is based on both the position and motion of an object. The **law of conservation of energy** states that energy may change form, but it cannot be created or destroyed. If you look at a swing, you can see how energy is conserved as the swing slows and stops. At the highest point of the swing, the potential energy is at its maximum and the kinetic energy is zero. As the swing begins to fall, the potential energy is converted into kinetic energy. At the bottom, the kinetic energy is now at its maximum while the potential energy decreases. Friction and air resistance change the swing's mechanical energy into thermal energy, which causes the swing to slow down and stop.

The law of conservation of energy can also be seen in the burning of campfire logs. The logs have chemical potential energy, which changes to light energy and thermal energy when they are burned. Thermal energy can be used to cook marshmallows for smores.

Review:

1. What is mechanical energy?
2. Explain the law of conservation of energy.