

## How are kinetic energy and potential energy different?

Kinetic energy and potential energy both have the ability to cause change. But they have some important differences. Kinetic energy is the energy of motion, but potential energy is stored energy that can be converted into motion. It is easy to know whether an object has kinetic energy because it is moving. It may not be easy to know how much potential energy an object has, because there are many kinds of potential energy. It is hard to see how much chemical energy an object has. However, you can usually know if an object has gravitational potential energy because it will be above the ground and can fall.

Many objects have both kinetic and potential energy. For example, an object can be both moving and above the ground. There are many examples of this: a helicopter flying through the air, a bumblebee whizzing past your head, or a baseball thrown to a catcher. The skydivers in the air have both kinetic and potential energy. They have kinetic energy because they are moving as they fall through the air. They also have gravitational potential energy because they are above the ground and can continue to fall.

**9 Classify** Determine whether the three scenarios in the chart below are examples of kinetic energy, gravitational potential energy, or both.

Scenario	Kind of energy
Speeding boat	
Flying bird	
Diver at the top of a diving board	

### Think Outside the Book **Inquiry**

**10 Classify** Keep a journal of ten examples of kinetic and potential energy that you see in one day. Are they examples of kinetic energy, gravitational potential energy, or both?