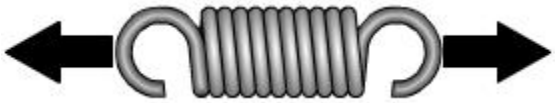
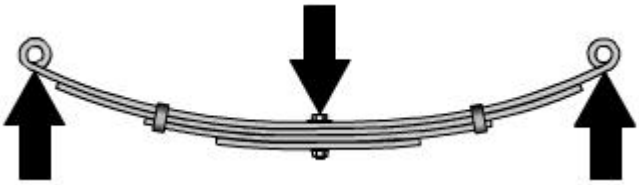
Springs

Springs can be squashed, pulled and twisted and will return to their original form when the pressure is removed. Energy is required to deform springs. This energy is stored as **potential energy** and is released as **kinetic energy**.

Springs are made from "springy" materials that:

- allow a certain amount of deflection under pressure without producing permanent bends in the material
- return to their original form when the pressure is removed.

Compression Spring This is a coil spring that has an open helical form and resists compressive forces. When it is compressed it reacts by pushing back until it has returned to its original form.	
Tension Spring This is a coil spring that has a closed helical form and resists tension forces. When it is stretched it reacts by pulling back until it has returned to its original form.	
Torsion Spring This is a coil spring that has a closed helical form and has a straight or hooked bar at its ends. It resists torsion forces. When it is twisted, i.e. when torsion force is applied and it is deformed, it reacts with an opposite torsion force until it has returned to its original form.	
Clock Spring This is spiral spring that resists torsion forces. One end of a clock spring is fixed and the other is wound to make a tighter spiral. The spring resists this torsion force and the energy used to wind the spring is stored in the spring as potential energy. Mechanisms are used that control the speed of release of the potential energy as kinetic energy. This kinetic energy is used to power mechanical clocks and clockwork toys.	
Leaf Springs Leaf springs are composed of one or more curved metal beams clamped and bolted together. Leaf springs are mostly used with road vehicles to absorb vibration and shocks caused by the vehicle moving over uneven road surfaces.	

Materials used for springs include:

- Carbon Spring Steels
- Beryllium Copper
- Phosphor Bronze
- Stainless Steel 302 & 316
- Titanium
- Brass