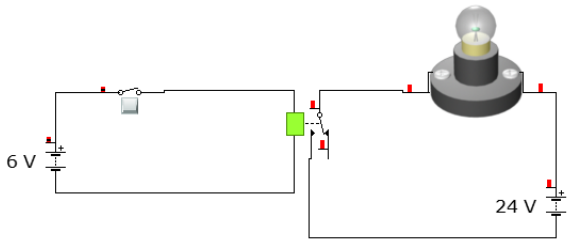
CS 257 Lesson 2
Activity 6: Introduction to Relays
Working with Relays to control another circuit

Introducing Relays

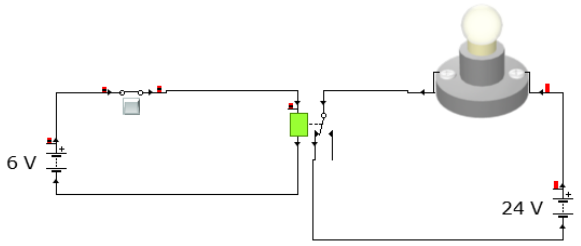
A relay is like an electronic switch. When you give it power, it closes another circuit. They are especially useful in the automotive industry and in home automation. Let's look at a simple example.

Here I am using a 6V battery to control a 24V light. This would work with a 120V light in your home as long as the relay was big enough. When the switch is open, no voltage flows through the relay coils so the contact points are open and the light is off.



When the switch is open, the relay is not energized. Notice the relay points do not allow voltage to flow to the lamp.

When you turn on the switch, a 6V current energizes the relay. The relay's contact points close and allow current to flow from the 24V source through the lamp and it turns on. We are using a low voltage circuit to manage a higher voltage circuit. Notice that the 6V and 24V circuits are completely separate and never share any power. The relay is sort of like a remote control in that respect.



When the switch is closed, the rely is energized. Notice the contact points are closed open and the lamp receives power.

In your home, a low voltage circuit could be used to turn on your porch light. The porch light needs 117V and would burn up our little switch.

When you start your car, a starter relay is energized and it then closes a circuit that allows 200-300 amps of current to connect with the starter motor.