**Potentiometer**

A manually adjustable, variable resistor with three terminals. Two terminals are connected to a resistive element, the third terminal is connected to an adjustable wiper. The position of the wiper determines the output voltage.

In sum, a sliding or rotating contact that create a resistance change that we can read into the Arduino board as an analog value. For instance, you can connect three wires to the Arduino board. The first goes to ground from one of the outer pins of the potentiometer. The second goes from 5 volts to the other outer pin of the potentiometer. The third goes from analog input 2 to the middle pin of the potentiometer.

By turning the shaft of the potentiometer, we change the amount of resistence on either side of the wiper which is connected to the center pin of the potentiometer. This changes the relative "closeness" of that pin to 5 volts and ground, giving us a different analog input. When the shaft is turned all the way in one direction, there are 0 volts going to the pin, and we read 0. When the shaft is turned all the way in the other direction, there are 5 volts going to the pin and we read 1023. In between, analogRead() returns a number between 0 and 1023 that is proportional to the amount of voltage being applied to the pin.

 