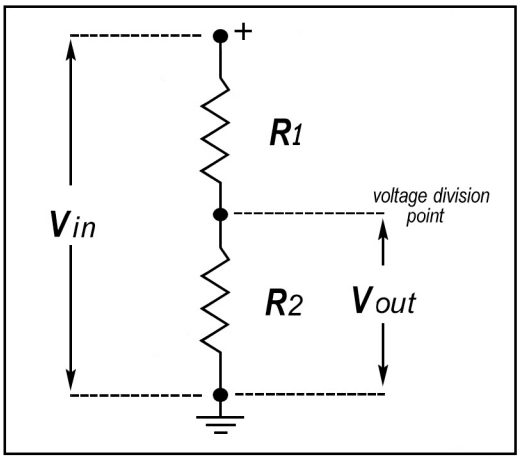
The Voltage Divider



A simple voltage divider:

A voltage divider is a circuit that, given a certain voltage input, produces a predictable fraction of the input voltage as an output voltage.

These circuits are ubiquitous and extremely useful in that they provide for a means of translating a variable resistance (which is easy to create with photo-resistors, bend-sensors, potentiometers, etc.) into a variable voltage.

The formula for calculating the voltage out (Vout) of a voltage divider is :

$$V_{out} = \left(\frac{R_2}{R_1+R_2} \right) V_{in}$$

Using a potentiometer as a voltage divider: