LESSON 19
Multiple LEDs in Parallel

Watch video Lesson 19

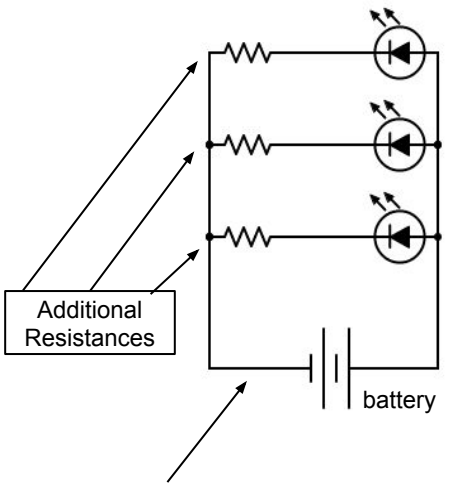
If you want to light multiple LEDs, then connect them in parallel as shown in the circuit on the right.

If you try to connect LEDs in series, each time you add an LED, the brightness of each in-series LED diminishes and also you have a possibility of burning out the LEDs because of the way they react in the circuit.

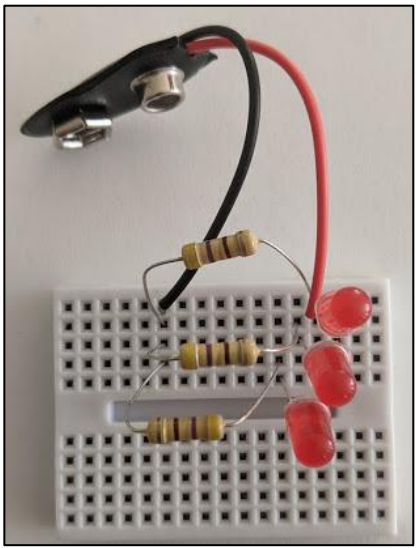
All the calculations you know how to do, in regards to the 'additional resistance' values, apply. Whatever additional resistance you come up with, all the LEDs will use that same value of resistor.

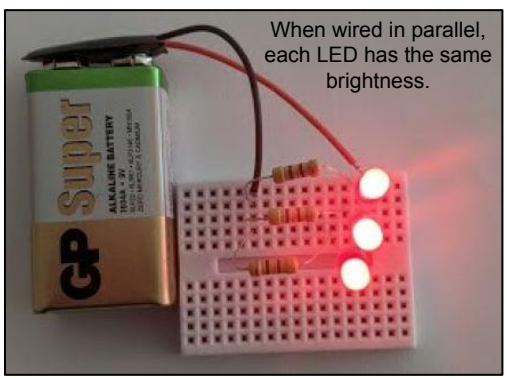
Practice Quiz

The schematic below shows 3 red LEDs in parallel circuit with a 9-volt battery. Each LED has its own additional resistance. The additional resistance is calculated depending on the color of the LED and the voltage of the battery.



The circuit you see in this schematic is built on the solderless circuit board on the right.





Read the Meter	Activity Page	Additional resistance with LEDs in parallel	19b

(1) In the box on the right, copy the schematic of the 3 LEDs wired in parallel from page 19a.

(2) If you have red LEDs and a power source of a 12 Volt battery, how much additional resistance do you put in series with each LED?

_____ ohms

(3) If you have blue LEDs and a power source of a 12 volt battery, how much additional resistance do you put with each LED?

_____ ohms

#2. Res = 10/0.018 = 556 ohms #3. Res = 9/0.014 = 643 ohms