

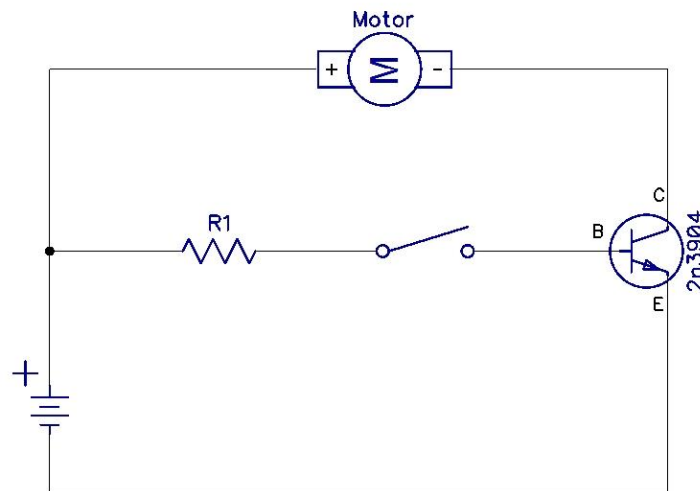
Breadboard Lab #6

“How an NPN Transistor works”

1. This circuit uses a 2n3904 transistor as shown. A transistor is used to amplify current. It can also be used when you need to switch something On/Off that draws lots of current.



2. Breadboard the following schematic diagram. Make sure your wires are flat! Get a FAN from your teacher to use as a motor. Use **two wires** as the switch. Set the Power Supply to 9 volts.



R1: 1K ohm (Brown, Black, Red, Gold)

3. Touch the two wires together that act like a switch. What happens? Now, change R1 to 100k (Brown, Black, Yellow, Gold). What is happening?
4. Answer the following questions. Use the [Electronic Components PowerPoint presentation](#) from class to answer to help.

- a) A transistor has three legs, the _____, _____ and _____.
- b) A transistor works as a _____ amplifier.
- c) The transistor uses a small _____ current to control a larger _____ current.
- d) If there is NO current at the BASE, the LED's will be _____.