

Ohm's Law:  $V = I * R$   $I = V / R$   $R = V / I$

1.

How is this circuit, or a circuit like it, used in everyday life? Provide at least three examples.

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**Do you have your motor running?**

Great. Load the Circ03Expansion Code. Fill in the answers below.

Give values for Voltage, Current and Resistance for each motor value. Find Current by breaking the circuit and using your multimeter. Calculate the Resistance using Ohm's Law. Record all values to the hundredths place.

2.

**Motor 50%**

$V = \underline{\hspace{1cm}} \text{ v } I = \underline{\hspace{1cm}} \text{ mA } R = \underline{\hspace{1cm}} \Omega$

3.

**Motor 60%**

$V = \underline{\hspace{1cm}} \text{ v } I = \underline{\hspace{1cm}} \text{ mA } R = \underline{\hspace{1cm}} \Omega$

4.

**Motor 75%**

5.

$V = \underline{\hspace{1cm}} \text{ v } I = \underline{\hspace{1cm}} \text{ mA } R = \underline{\hspace{1cm}} \Omega$

6.

**Motor 100%**

$V = \underline{\hspace{1cm}} \text{ v } I = \underline{\hspace{1cm}} \text{ mA } R = \underline{\hspace{1cm}} \Omega$

7.

Circle the diode in the circuit.

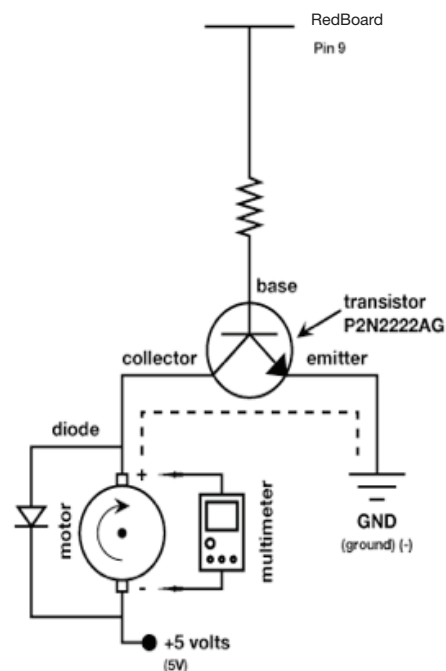
8.

Draw arrows to indicate direction of current on dotted line.

9.

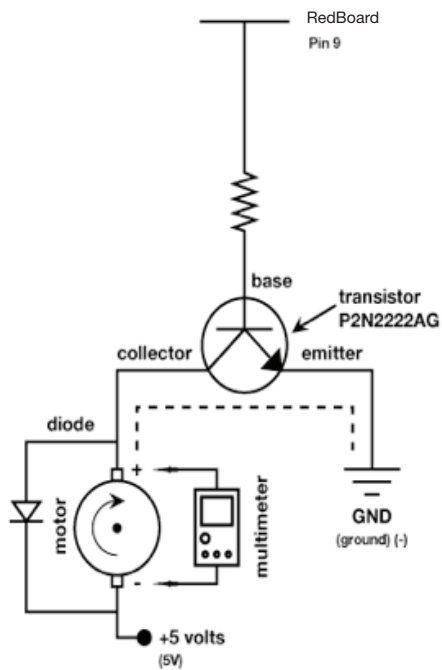
Add an on/off switch to this schematic.

Circuit:



## Circuit #12 Spinning Motor

Circuit:



11.

How would you use this circuit if you were an engineer? Would you make a break-dancing robot penguin? To move a trapdoor? To make a yo-yo that plays itself? Get creative.

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12.

Draw one example of how this circuit could be used in everyday life. Label all components and give it a title.

10.

Draw a logic flow chart of the circuit here: