***Circuit Activities***

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[Ohm’s Law](https://phet.colorado.edu/en/simulation/ohms-law): [**https://phet.colorado.edu/en/simulation/ohms-law**](https://phet.colorado.edu/en/simulation/ohms-law)

1. As you change the value of the battery voltage, how does this change the current through the circuit and the resistance of the resistor? If the current or resistance remains constant, why do you think? EXPLAIN!
2. As you change the value of the resistance of the resistor, how does this change the current through the circuit and the battery voltage? If the current or voltage remains constant, why do you think? EXPLAIN!

[Battery-Resistance Circuit](https://phet.colorado.edu/en/simulation/battery-resistor-circuit): **https://phet.colorado.edu/en/simulation/battery-resistor-circuit**

1. Are the blue spheres moving through the circuit positive or negative charges? How can you tell? EXPLAIN!
2. What happens when you increase the resistance of the resistor? How does the current through the circuit, the speed of the blue spheres, the voltage across the battery, the temperature of the resistor, and the green particles in the resistor change? Why (or why not) does each of these change as they do? EXPLAIN!
3. What happens when you increase the voltage across the battery? How does the current through the circuit, the speed of the blue spheres, the resistance of the resistor, the temperature of the resistor, and the green particles in the resistor change? Why (or why not) does each of these change as they do? EXPLAIN!

**Follow-up sims:** [**Circuit Construction Kit**](https://phet.colorado.edu/en/simulation/circuit-construction-kit-ac)**,** [**Conductivity**](https://phet.colorado.edu/en/simulation/conductivity) **(energy level model makes this higher level).**