**Electricity Mini Labs** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The first two parts of this lab use a virtual circuit tool to create and test different circuit designs.

[Click Here for the PHET Circuit Construction Kit](https://phet.colorado.edu/sims/html/circuit-construction-kit-dc-virtual-lab/latest/circuit-construction-kit-dc-virtual-lab_en.html)

**Part 1: Building Circuits**

For each challenge, build a working circuit in the PHET Circuit Construction Kit and screenshot

|  |  |
| --- | --- |
| **Three lightbulbs each lit up with a different brightness**  *Hint: you may need to adjust resistances in the bulbs by clicking on them* |  |
| **Three lightbulbs and a switch that turns off one but leaves the others on** |  |
| **Design a piece of art that involves the lightbulbs in a clever way.**  *Lightbulbs must light up* |  |

**Part 2: Measuring Circuits**

Build each of the circuits diagrammed below in the PHET circuit builder and use the ammeter and voltmeter to measure the properties in the tables on the right.

Circuit 1

|  |  |  |
| --- | --- | --- |
|  | Measure the voltage using the Voltmeter | |
| Voltage across R1 |  |
| Voltage across R2 |  |
| Voltage across R3 |  |
|  |  |
| Measure the current using the Ammeter | |
| Current at point A |  |
| Current at point B |  |
| Current at point C |  |
| Current at point D |  |

Circuit 2

|  |  |  |
| --- | --- | --- |
|  | Measure the voltage using the Voltmeter | |
| Voltage across R1 |  |
| Voltage across R2 |  |
|  |  |
| Measure the current using the Ammeter | |
| Current at point A |  |
| Current at point B |  |
| Current at point C |  |
| Current at point D |  |
|  |  |

**Part 3: Electrical Scavenger Hunt**

Find three different examples or items around your house that have electrical properties printed on them. (for example, most chargers or appliances have power/voltage/current ratings). Take pictures of these items showing the label and the object itself and include in the table below

|  |
| --- |
|  |
|  |
|  |