**Electricity Final Task**

*Overview*

Wiring in a house is complex array of parallel and series circuits, with a variety of voltage and current limitations. You will use your knowledge of electricity to effectively wire lights throughout a doll house.

*Materials*

* IKEA Flisat Doll House
* LEDs
* Various Resistors
* Potentiometer
* Switches
* Copper Tape
* Power Supply

*Wiring Requirements*

1. The lights in each lower room need to be individually controlled by a switch
2. One of the lower rooms needs to have 2 LEDS
3. One of the lower rooms needs to have a dimming system
4. The upper area needs multiple lights that are controlled equally by two switches
5. \*BONUS\* There could be an “outlet” so that another LED could be “plugged in”

*Submission Requirements* ***(1 per person)***

1. Complete circuit diagram of the entire circuit
2. Reasoning for using series/parallel circuits
3. Ohm’s Law calculations used to identify resistors, explained as needed
4. Power calculation for each different resistor to check it is under 0.5 W (max power of these resistors)
5. Calculation of overall current using Kirchoff’s Rules

Helpful Links

* [Understanding LEDS](https://www.evilmadscientist.com/2012/resistors-for-leds/)
* [What is a Potentiometer?](http://www.physics-and-radio-electronics.com/electronic-devices-and-circuits/passive-components/resistors/whatispotentiometer.html)