***Electric House Project- May work with 2 other people.***

**Project Due Date: May 15, 2014**

*For this project, you will construct and wire a model house according to the requirements below.* ***Most materials will be provided*** *by Ms. Isabell. You should return any materials left-over to the teacher.*

**Part A & Part B (**construction of the building )**should be complete (or close to completion) by May 9th, 2014.** *On this day, you will be provided with materials to do the wiring. You can come during lunch/Teamtime, etc to get the pieces you need as necessary.*

**A. The Building**

Construct your building in any way you like, *as long as it meets these criteria*:

* has two rooms connected by a doorway or passage
* structural materials can include but are not limited to: cardboard, foamboard, shoeboxes
* your house must be *at least* 4” x 6” x 1’ (close to the size of a shoebox)

**B. Decorating**

Your building is to be decorated neatly and:

* should reflect the purpose of the room (i.e. a refrigerator should not be in a bedroom)
* all **inside & outside** surfaces of your box (walls, floors, etc.) must be covered
* some kind of 3D objects (tables, chairs, beds, etc) must be present in each room
* *you may only use* ***some*** *premade furniture, toys, people, Legos, etc.*- By “some” I mean, you should NOT have everything store-bought. I will allow average of one premade item per room. **Everything else must be made for this project.**

**C. The Wiring- will be provided with materials on May 9th, 2014**

To earn *full credit*, each circuit below must be present and working in class:

1. A series circuit room: two lights in parallel with each other and in series with two other lights (four lights total) with a switch in one room
2. A parallel circuit room: three lights in parallel with a switch in one room
3. A single outside light with a switch

Specifics:

* Switches canbe made from brads and paper clips.

Switches made from 2 brass brads and one paperclip.

* Your house will be powered by a 9V battery so make an obvious **two leads** to attach your battery to during testing if you do not supply your own battery.
* Each circuit must be able to work independently from the other but both must be able to be on at the same time *without moving the battery*.
* Insulated wire and lights from holiday lights will be provided.
* You will need access to scissors, wire cutters and wire strippers.

**D. The Circuit Diagram**

**You must provide one diagram for the complete circuit in your building. It must:**

* be labeled and be complete including all electrical parts for each circuit
* use accurate circuit symbols- research is needed for this portion
* be neat & drawn with a straight edge ruler
* fill an entire piece of 8.5”x11” paper
* caption (1 paragraph) to describe both parallel and series circuit in your house (how are the loads arranged, how they differ from one another)