



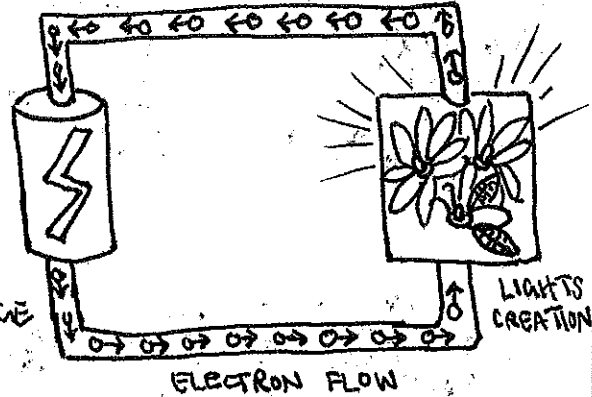
# CIRCUIT BLOCKS +

(INSTRUCTIONS BY FAY ATOMZ)  
AKA IFE WILLIAMS

**CIRCUIT:** A PATHWAY OR LOOP MADE OF WIRES THAT ELECTRONS FLOW THROUGH. CIRCUITS MUST BE CONNECTED (I.E. LOOPED) TO FLOW. **AN ELECTRIC CIRCUIT REQUIRES 3 THINGS:**

1. A SOURCE OF ELECTRICAL POTENTIAL DIFFERENCE OR VOLTAGE WHICH GIVES THE FORCE TO MAKE ELECTRONS MOVE.  
 BATTERY = VOLTAGE
2. A CONDUCTIVE PATH THAT ALLOWS THE FLOW OR MOVEMENT OF CHARGES  
 WIRE = CONDUCTIVE PATH
3. AN ELECTRICAL RESISTANCE (RESISTOR), ANY OBJECT THAT USES ELECTRICITY TO WORK.

AAA LED LIGHTS = RESISTOR



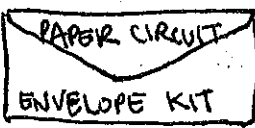
ELECTRON FLOW

LIGHTS CREATION

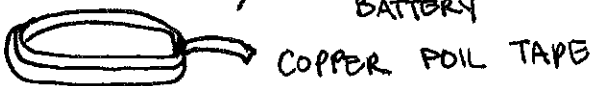
ELECTRICITY IS A FLOW OF ELECTRONS AROUND A CIRCUIT

# MATERIALS

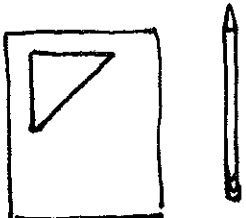
## PAPER CIRCUITS



AAA A FEW LED LIGHTS  
+ 1 3VOLT COIN BATTERY

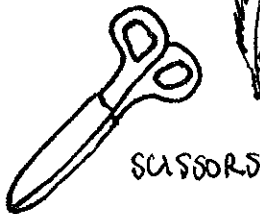


COPPER FOIL TAPE

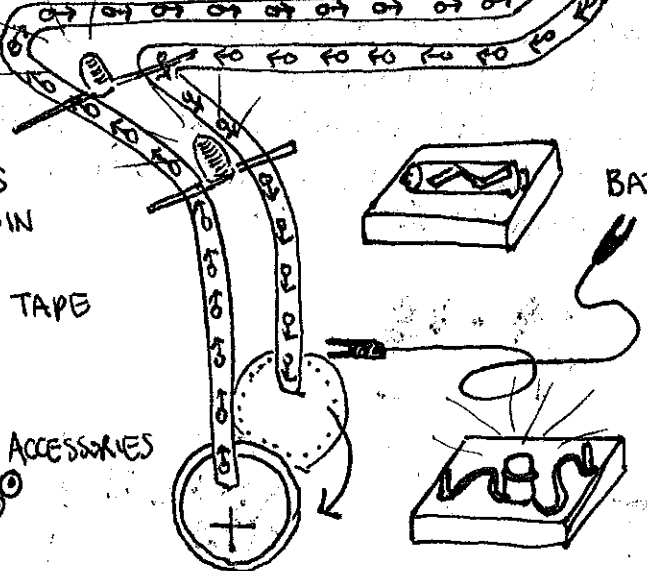
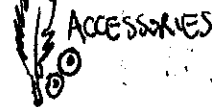


GRAPHITE PENCIL

CONSTRUCTION PAPER



SCISSORS



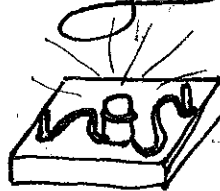
## BLOCK CIRCUITS



BATTERY BLOCK

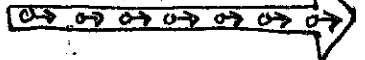


ALLIGATOR CLIP (AKA CONDUCTIVE PATH)



RESISTOR

INSTRUCTIONS

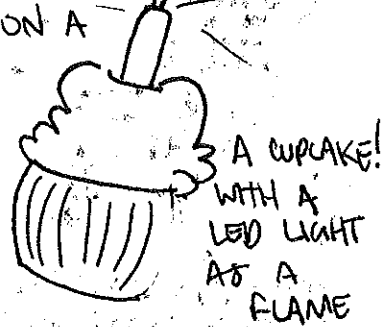


# PAPER CIRCUITS

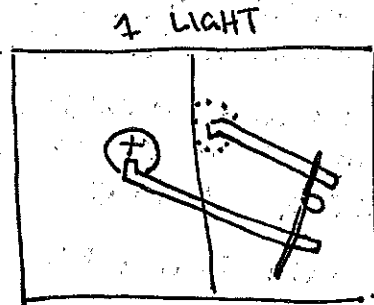
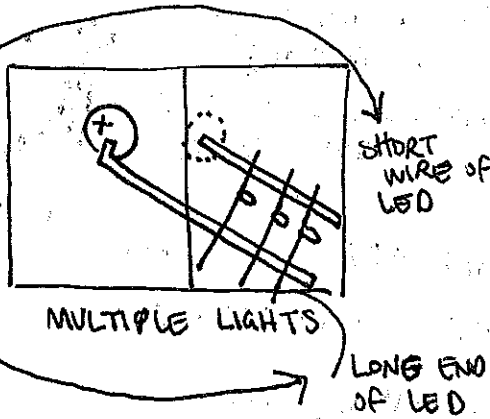
\* DESIGN YOUR PICTURE/IMAGE LIKE A CARD, SO IT HAS A FLAP TO CREATE YOUR CIRCUIT.

1. FIRST STEP IS TO DESIGN THE IMAGE THAT WILL BECOME ILLUMINATED BY THE LED LIGHTS IN YOUR ENVELOPE KIT. YOU CAN DRAW AN IMAGE WITH WRAPHITE, CUT OUT A DESIGN WITH CONSTRUCTION PAPER, CREATE A CREATURE WITH FEATHERS OR OTHER ACCESSORIES.

2. ONCE YOU HAVE DESIGNED AND DRAWN OR CUT YOUR PAPER DESIGN, IT'S TIME TO CREATE THE CIRCUIT THAT WILL POWER THE LED LIGHTS. REMEMBER TO CREATE YOUR PICTURE ON A FOLDER PIECE OF PAPER (LIKE A CARD!) SO YOU CAN CREATE THE CIRCUIT BEHIND/INSIDE THE CARD.



MAKE SURE TO PLACE ALL THE LED'S SHORT WIRE ON ONE SIDE OF THE PARALLEL WIRE, AND THE LONG END ON THE OTHER.



PLACE THE BATTERY AT THE BEGINNING OF THE CIRCUIT TO CHARGE THE ELECTRONS AND COMPLETE THE LOOP.

# BLOCK CIRCUITS

PLAY AROUND WITH THE DIFFERENT RESISTOR BLOCKS (LIGHTS), BATTERY BLOCKS, AND SWITCHES TO CREATE A CIRCUIT LOOP CONNECTED WITH ALLIGATOR CLIPS.

TRIAL AND ERROR: IF THE RESISTOR IS NOT LIGHTING UP, THINK ABOUT THESE QUESTIONS:

- ARE THE BATTERIES IN THE BATTERY BLOCK CHARGED?
- ARE THE ALLIGATOR CLIPS CONNECTED TO EACH COMPONENT OF THE LOOP? IS THE LOOP IN A CONTINUOUS POSITIVE AND NEGATIVE SEQUENCE.

