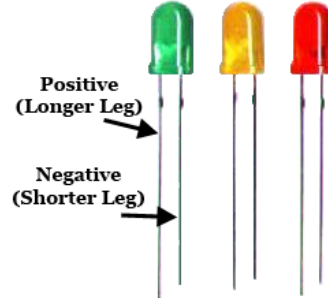
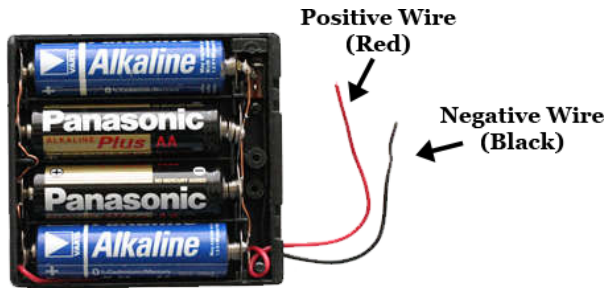


Squishy Circuit Lesson

Parts List



Battery Pack with 4 AA Batteries

LEDs (Light Emitting Diodes)



Dough A (Colored)



Dough B (White)

WARNING

Never connect the Batteries directly to the LEDs with using dough. This can cause the LED's to overheat or break.

Dough A Recipe

Ingredients

- 1 cup Water
- 1½ cups Flour
- ¼ cup Salt
- 3 Tbsp. Cream of Tatar
(Lemon Juice can be substituted)
- 1 Tbsp. Vegetable Oil
- Food Coloring

Instructions

1. Mix all ingredients except ½ cup of flour in a medium sized pot
2. Cook over medium heat and stir continuously
3. The mixture will begin to boil and get chunky
4. Keep stirring until the mixture forms a ball in the center of the pot
5. Place the ball on a lightly floured surface. **Caution: Dough will be hot**
6. Flatten out dough and let cool for several minutes
7. Slowly knead in the remaining flour until the desired consistency is reached
8. Store in a airtight container

Dough B Recipe

Ingredients

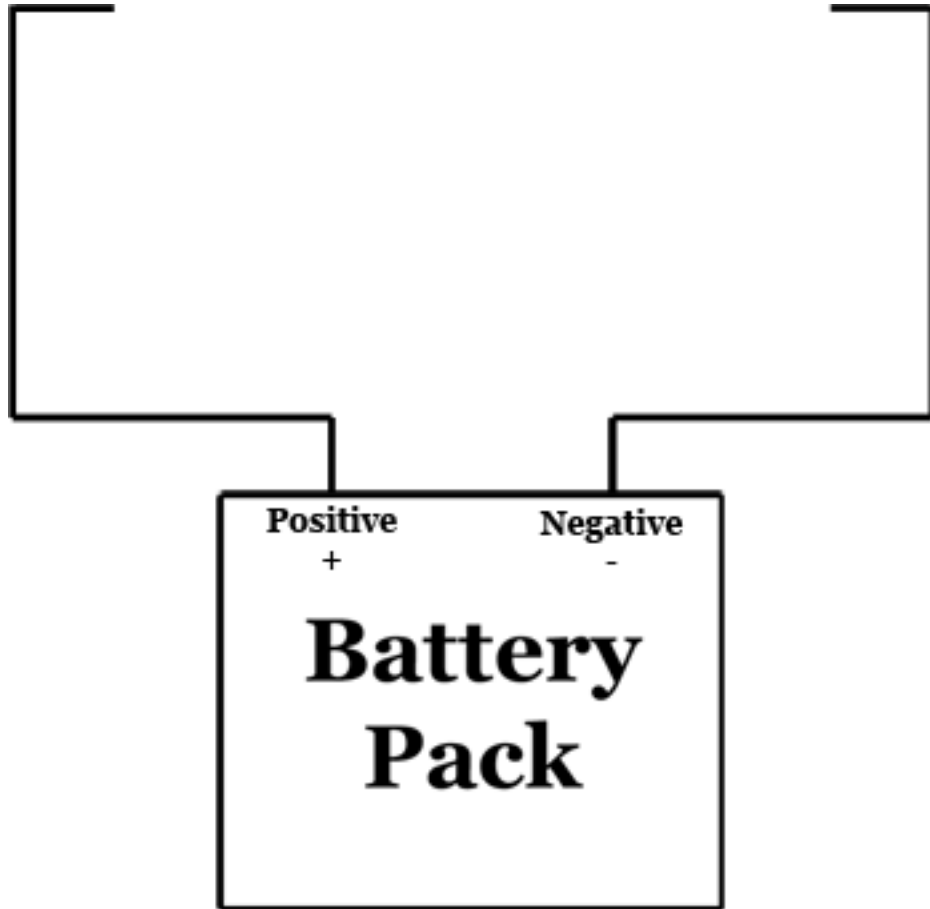
- 1/2 cup Deionized (or Distilled) Water
- 1½ cups Flour
- ½ cup Sugar
- 3 Tbsp. Vegetable Oil

Instructions

1. Mix 1 cup of flour, vegetable oil, and sugar in a large bowl
2. Mix about 1 Tbsp. of the deionized water and stir
3. Repeat Step 2 until a majority of the water is absorbed by the mixture
4. Knead the mixture into one "lump"
5. Continue kneading water into the mixture until it has a sticky, dough-like texture
6. Now, knead the flour into the dough until the desired consistency is reached
7. Store in an airtight container

Simple Circuit

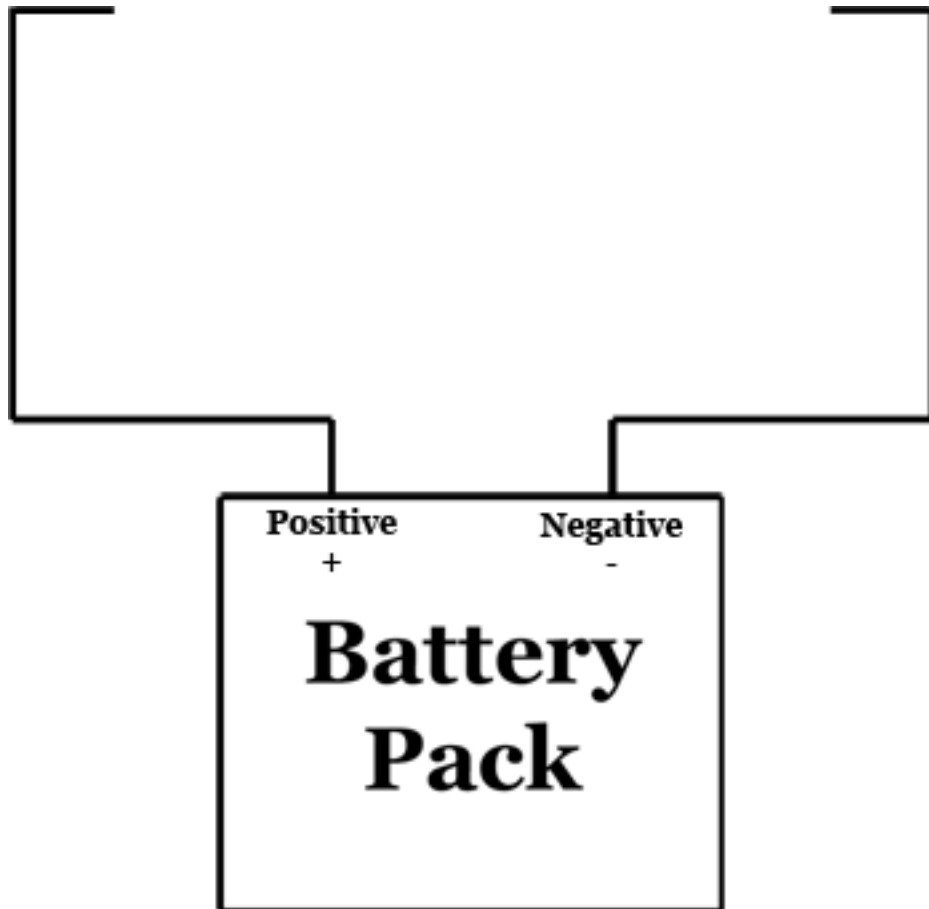
Build a simple circuit. Draw your circuit using the diagram below, labeling all parts.



What did you notice about the LEDs in your simple circuit?

Parallel Circuit

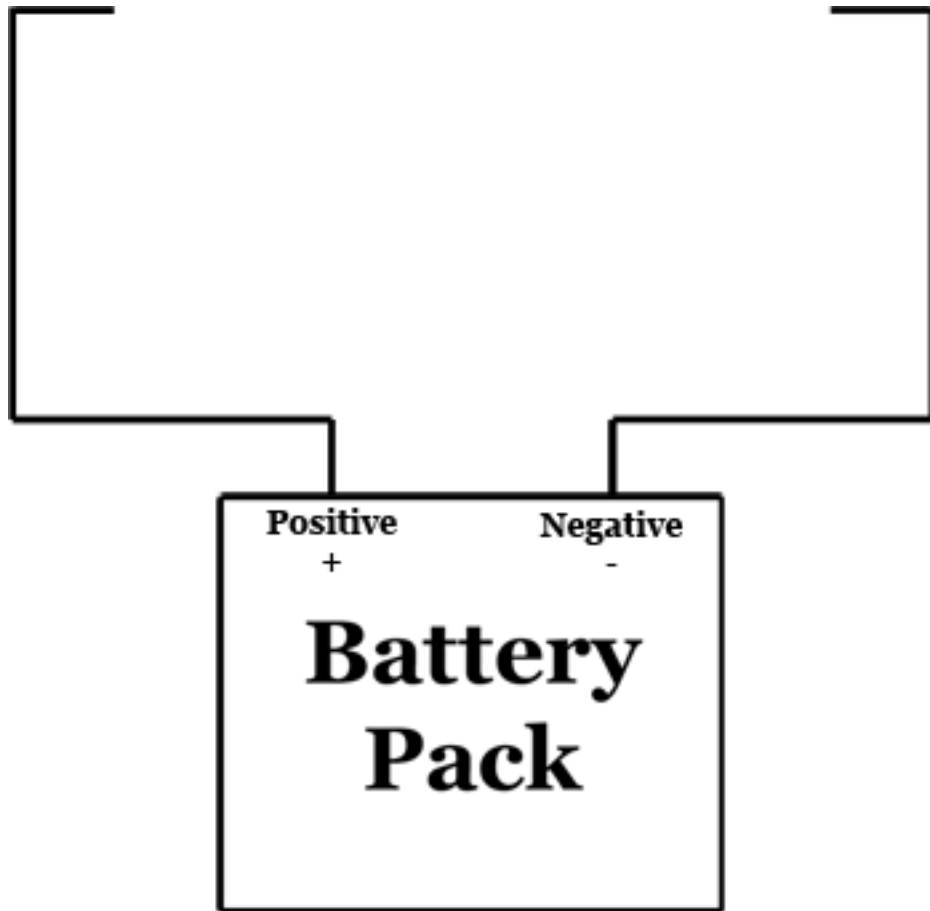
Build a parallel circuit. Draw your circuit using the diagram below, labeling all parts.



What did you notice about the LEDs in your parallel circuit?

Series Circuit

Build a series circuit. Draw your circuit using the diagram below, labeling all parts.



What did you notice about the LEDs in your series circuit?

MA Technology and Engineering Standards

3-5-ETS1-3

Plan and carry out tests of one or more elements of a model or prototype in whichever variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign a model or prototype.

3-5-ETS1-5

Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.

3-5-ETS2-1

Recognize that technology is any modification of the natural or design world done to fulfill human needs or wants. These modifications can be improvements to existing technologies or the development of new technologies.

3-5-ETS2-2

Describe that technological products or devices are made up of parts. Use sketches or drawings to show how each part of a product or device relate to other parts in the product or device.

Resources

Kennedy-Longfellow/Lesley University Partnership
<http://klo.lesley.edu>

Squishy Circuits
<http://courseweb.stthomas.edu/apthomas/SquishyCircuits>

Makey Makey
<http://makeymakey.com>

littleBits
<http://littlebits.cc>