Electric Play Dough Project 1: Make Your Play Dough Light Up, Buzz, & Move!

https://www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p073/electricity-electronics/squishy-circuits-project-1 (http://www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p073/electricity-electronics/squishy-circuits-project-1)

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Experimental Procedure

1. Optional: if you are making your own homemade conductive and insulating dough in addition to using the dough in the kit, follow the instructions on Electric Play Dough Recipes (http://www.sciencebuddies.org/science-fair-projects/references/squishy-circuits-recipes).
2. Insert the four AA batteries into the battery pack that came with your kit. Make sure the "+" signs on the batteries line up with the "+" signs inside the battery pack. Ask an adult if you need help making sure they are in the correct way.
3. Make two lumps of Play-Doh (or homemade conductive dough) and one lump of modeling clay (or homemade insulating dough). Stick them together, with the modeling clay in the middle; make sure the two lumps of Play-Doh are not touching each other.
4. Stick each metal rod from the battery pack (there should be one attached to a black wire, and one attached to a red wire) into its own lump of Play-Doh.
5. Pick an LED from your kit. The two pieces of metal sticking off the LED are called "leads" (pronounced "leeds"). Insert one lead into each lump of Play-Doh. **Important**: Electricity can only flow through LEDs in one direction. The LED has one lead that is slightly longer than the other one; this is the **positive** lead, and it should be inserted into the lump of Play-Doh with the *red* wire. The shorter lead should be inserted into the lump of Play-Doh with the *black* wire.
6. Use the built-in switch to turn on your battery pack. Your LED should light up! If it does not, do not worry; you probably just plugged your LED in backwards. Flip your LED around and try again (if it still does not light up, open your battery pack and make sure you inserted each battery facing the correct direction, paying attention to the "+" symbols). If you are still having trouble, read the FAQ (#help) section for help.
7. Congratulations! You have made your first play dough circuit. It should look similar to the one in Figure 5.

Figure 5. Your first play dough circuit should look like this.

7. Now it is time to get creative! The *shape* of the Play-Doh lumps does not matter when connecting the LEDs, as long as there is a **closed circuit** for electricity to flow. Figure 6 shows two Play-Doh "people" holding hands with an LED; can you come up with your own fun designs for your own circuits?

Figure 6. The *shape* of the Play-Doh pieces does not matter when connecting LEDs; as long as there is a closed circuit for electricity to flow (and no short circuit), the LED will still light up.

8. Return the dough to its plastic containers so it does not dry out. Store homemade dough in airtight plastic bags or containers. The FAQ (#help) section has more information about how long homemade dough will last in storage.

Frequently Asked Questions (FAQ)

FAQ for this Project Idea available online at https://www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p073/electricity-electronics/squishy-circuits-project-1#help (http://www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p073/electricity-electronics/squishy-circuits-project-1#help).