



### Play-Doh Circuits



#### NAEYC Standards:

**2.C.03 K a.** Children are provided varied opportunities and materials that support fine-motor development.

**2.F.03 K** Children are provided varied opportunities and materials to categorize by one or two attributes such as shape, size, and color.

**2.G.07 K** Children are provided varied opportunities and materials that encourage them to discuss scientific concepts in everyday conversation.

**2.G.08 K** Children are provided varied opportunities and materials that help them learn and use scientific terminology and vocabulary associated with the content areas.

**2.G.04 K** Children are provided varied opportunities to use simple tools to observe objects and scientific phenomena.

**2.J.06 K** Children are provided many and varied open-ended opportunities and materials to express themselves creatively through two- and three-dimensional art.

#### HighScope KDIs:

##### A. Approaches to Learning

**1. Initiative:** Children demonstrate initiative as they explore their world.

**2. Planning:** Children make plans and follow through on their intentions.

**3. Engagement:** Children focus on activities that interest them.

**5. Use of resources:** Children gather information and formulate ideas about their world.

**17. Fine-motor skills:** Children demonstrate dexterity and hand-eye coordination in using their small muscles.

##### E. Mathematics

**32. Counting:** Children count things.

**35. Spatial awareness:** Children recognize spatial relationships among people and objects.

##### F. Creative Arts

40. Art: Children express and represent what they observe, think, imagine, and feel through two- and three-dimensional art.
43. Pretend play: Children express and represent what they observe, think, imagine, and feel through pretend play.
47. Experimenting: Children experiment to test their ideas.
48. Predicting: Children predict what they expect will happen.
49. Drawing conclusions: Children draw conclusions based on their experiences and observations.
50. Communicating ideas: Children communicate their ideas about the characteristics of things and how they work.
51. Natural and physical world: Children gather knowledge about the natural and physical world.
52. Tools and technology: Children explore and use tools and technology.

## Guidance:

In this lesson, children will be able to build electrical circuits and add decorative lighting to their constructions. Panelcraft or other non-conductive play items can be added to this activity to enhance the imaginative play experience. Make sure two batteries are *never* stuck together end-to-end, and that the LEDs are only stuck into the Play-Doh, not directly to the battery terminals. Doing so could create excessive heat.

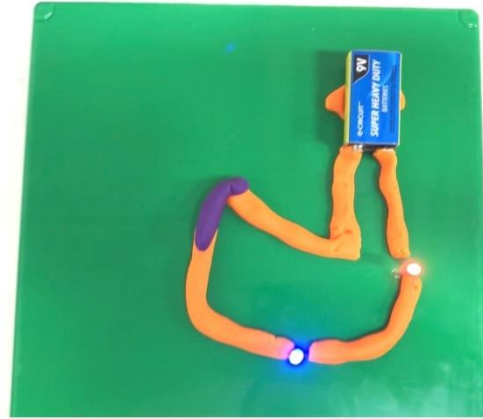
## Materials:

- ❖ Play-Doh has salt in it, which makes it electrically conductive. In this activity, it serves as wires and switches for electrical circuits.
- ❖ For each child, provide Play-Doh, 6 Panelcraft blocks and about a half-dozen LEDs.
- ❖ 1 9V battery for each child



## Beginning:

- ◆ Ask children if they have seen holiday lights on houses or buildings.
- ◆ Ask them how they work. Next, demonstrate how to make a series circuit with Play-Doh wires, Play-Doh switch, LEDs and battery.
- ◆ Then, demonstrate that the LED wires can be spread apart in order to cross the gap in the Play-Doh wires. Show that if an LED does not light up, it should be turned around because LEDs only light up one way.



- ◆ Next, demonstrate how to make a parallel circuit with Play-Doh wires, Play-Doh switch LEDs and battery.
- ◆ Tell students that they can design a house, building or anything they want with lights, using the Play-Doh, LEDs, battery and Panelcraft blocks.

## Middle:

- ◆ Move around from child to child, making specific comments on what you see children doing.
- ◆ Assist with placing the LEDs or batteries as needed.



## End:

- ◆ Give students a three-minute warning.
- ◆ After three minutes ask them to pull out the LEDs and place them in a zip lock bag or storage container. Place a piece of tape across the terminals of the battery for storage.
- ◆ Ask them to put the Play-Doh back in the containers and seal the lids.