

Day 1: Color Magic

Background Knowledge: Color Mixing

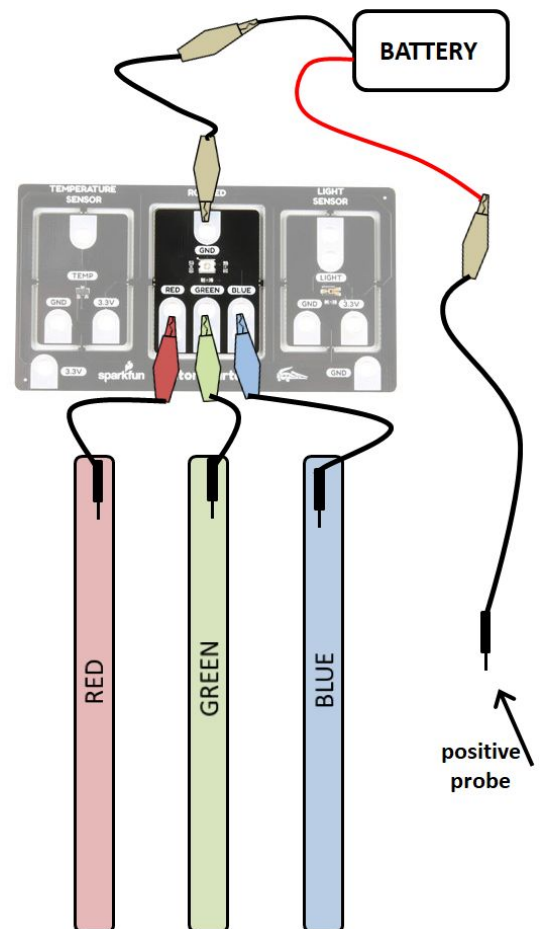
MIXING PAINTS OR PIGMENTS	MIXING LIGHT
When you mix paint, the three primary colors are RED, BLUE, and YELLOW.	For light, the three primary colors are RED, GREEN, and BLUE.
RED + BLUE = _____	RED + GREEN = _____
BLUE + YELLOW = _____	GREEN + BLUE = _____
YELLOW + RED = _____	BLUE + RED = _____

Follow the instructions below and answer the questions as you do the activity.

Build the lab set-up shown here: Each piece of Play-Doh should be at least 6 inches long.

1. What happens when you touch the positive probe to the red, blue, or green Play-Doh?

2. Connect the red and green Play-Doh at the bottom of the tubes. What happens when you touch the positive probe near the top of the red Play-Doh?



IMPORTANT TO KNOW: The electricity needs to travel a short distance to get to the red connection, but a much longer distance to get to the green connection. This means there is more electrical current at the red connection than at the green connection. The red light of the LED will be brighter than the green light.

3. Keep the red and green Play-Doh connected at the bottoms of the tubes. What happens when you touch the positive probe near the top of the green Play-Doh? What color is the LED?

IMPORTANT TO KNOW: Now the electricity needs to travel farther to get to the red connection and only a short distance to get to the green connection. This means that the green light of the LED will be brighter than the red light, and they will mix together to make a different color.

The longer path means that the electricity encounters more **RESISTANCE** because it has to travel farther. In electronic devices, a longer wire will have more resistance than a shorter wire. Resistance lowers the amount of electric current that will reach the end of the wire.

4. Connect different combinations of Play-Doh tubes and touch them in different places with the positive probe. What colors can you make? On separate pieces of paper, each member of your group should sketch how your group got 4 different colors (see the example). Each person should sketch a different color.

