

Troubleshooting

Common Reasons LEDs Don't Light Up

1. Is there a short in the circuit?

- Check to see that the SpaceDough balls are not touching
- Check to see that the LED legs or battery leads are not touching

2. Are the battery leads securely connected to the SpaceDough?

- Try pushing on them or re-inserting them into the Space Dough

3. Are the LEDs connected in the right direction?

- Flip the LEDs to test - the long leg should be connected to positive in the circuit (red) and the short leg should be connected to negative (black)

4. Are there too many components in the circuit?

- This most often happens in a series circuit. Try with no more than two LEDs

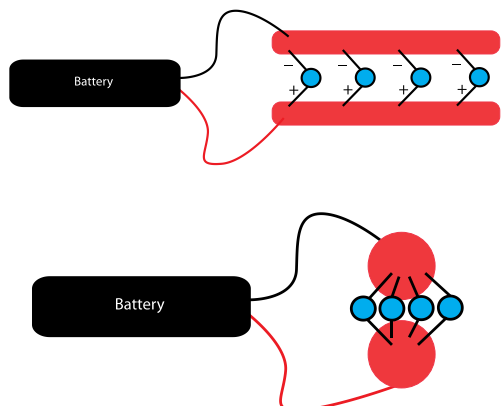
5. Are you adding too much resistance with SpaceDough?

- This is rare -- but using smaller pieces of SpaceDough and placing components closer together can help

6. If none of this works, try different battery packs, or different LEDs.

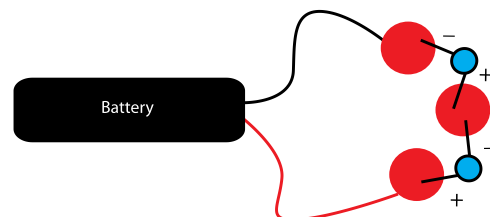
Parallel Circuits

Current is shared all the way along the circuit:



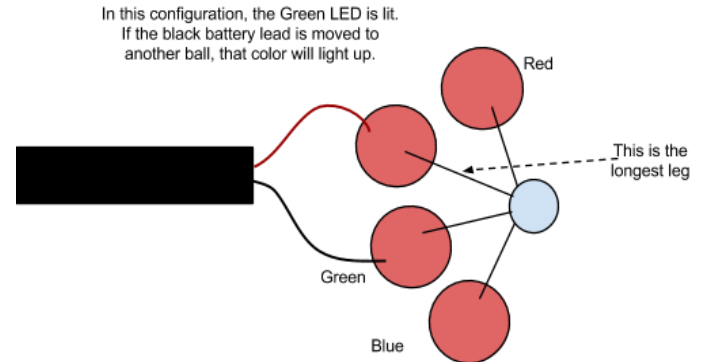
Series Circuit

Current is shared with each light, so each progressive one receives less current. Very few LEDs can be powered, and each one along is dimmer than the last. Do NOT use the series circuit configuration for wearable electronics.

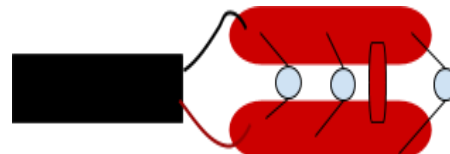
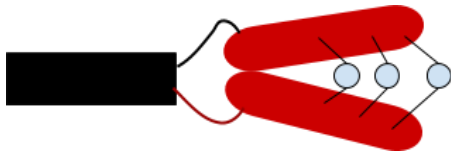


Optional Experimentation

RGB LED Set Up: The longest leg is the positive one! Each short leg is a negative lead for a different color.



Shorts in Parallel Circuits



SAFETY NOTE: The battery packs used in this exercise can pose a burn hazard if not properly used. Leaders are strongly recommended to explore the “protecting power sources” guide to making safer battery packs. If protected battery packs are not an option, battery packs must be handled carefully: leaders must make sure students NEVER allow bare positive and negative wires to touch and batteries MUST BE REMOVED from packs before storing.