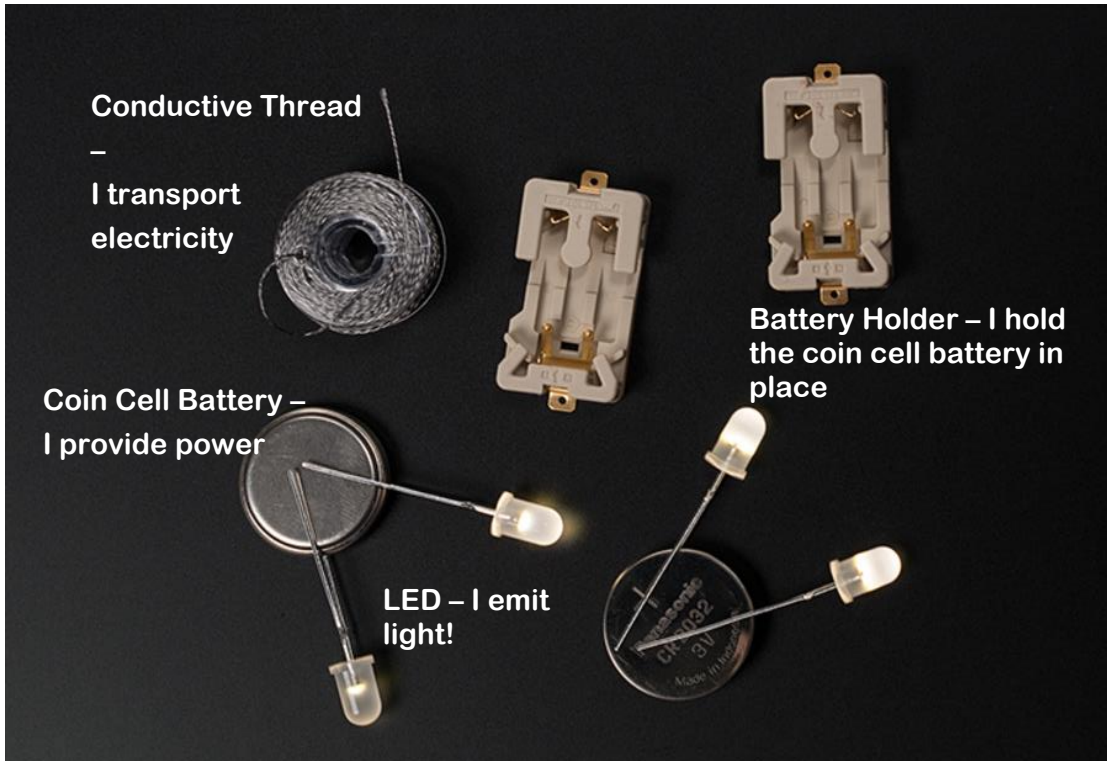
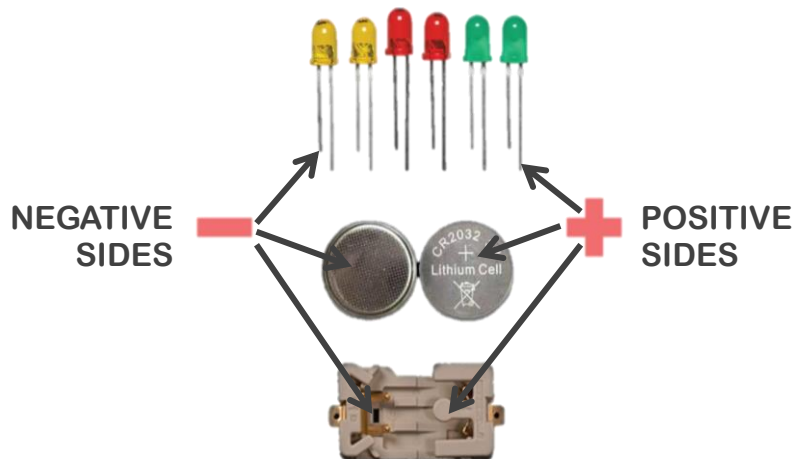


## Electronic Components

A quick reference for all the electrical components used in this activity







## Polarity of the Components



# Troubleshooting

A quick reference for troubleshooting misbehaving circuits!

SYMPTOMS	CAUSES	SEWN CIRCUITS
<b>The LEDs are not lighting up.</b>	<b>Polarity Problems</b>	<ul style="list-style-type: none"> <li>Has the battery been inserted correctly? (The top side has a “+” symbol marked)</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(Top)</p> </div> <div style="text-align: center;">  <p>(Bottom)</p> </div> </div> <ul style="list-style-type: none"> <li>Is the battery holder connected the right way? (The side with three plastic prongs is the positive terminal and the side with just metal prongs is the negative terminal).</li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>Are the LEDs oriented the right way? Longer, or larger circular legs, are positive and the shorter, or smaller circular legs, are negative.</li> </ul> <div style="text-align: center;">  </div>
	<b>Circuit Overload Problems</b>	<ul style="list-style-type: none"> <li>Are there too many LED's? If there are more than 6 lights per battery they may be dim or non-functioning.</li> <li>Is the circuit too long? A circuit should be no more than 36”.</li> </ul>
	<b>Short Circuit Issues</b>	<ul style="list-style-type: none"> <li>Do the positive and negative thread trails touch each other? If so, remove the stitches from one of the trails and re-stitch so that they do not touch.</li> <li>Trim the ends of knots. Long tails could touch each other.</li> </ul>
	<b>Connection Issues</b>	<ul style="list-style-type: none"> <li>Is every component sewn securely? They should fit tightly to the fabric or foam. If not, reinforce with more stitches.</li> <li>Are the knots securing the battery holder and components secure? If not, reinforce with more stitches and tie another knot.</li> <li>Are the stitches intact and pulled tight? If not, re-stitch.</li> </ul>
<b>The needle does not go through the battery terminals</b>	<b>Attachment Issues</b>	<ul style="list-style-type: none"> <li>It may be easier to push the thread manually through the battery holder's leads, or to use a needle threader.</li> <li>Some needles are too big for the battery holder. Try a smaller needle.</li> </ul>