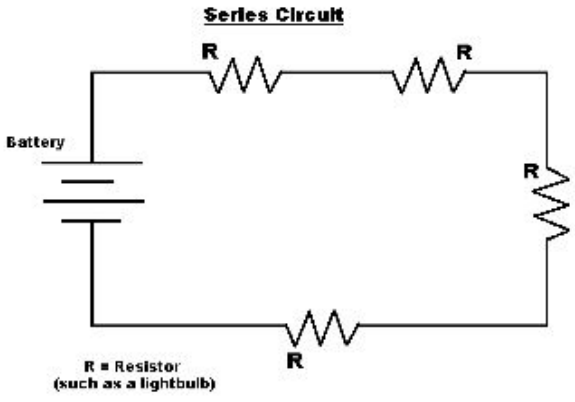
615-4065 (10-171) Battery Holder

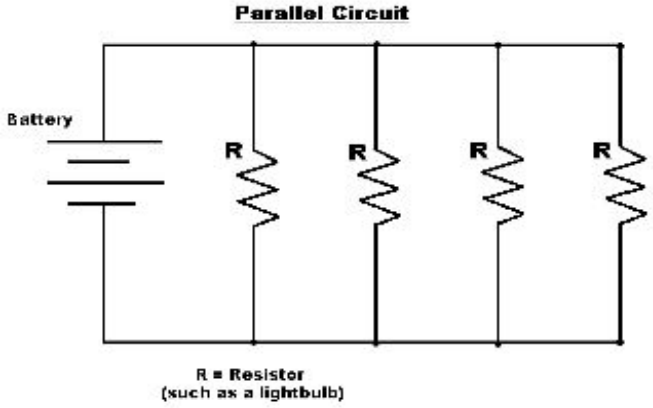
Introduction: Basic electrical circuits come in different flavors. Two of these are *series* and *parallel*. They type of circuit depends on how the components are connected together. Series and parallel circuits have different applications and properties, making both of them useful.

Series circuits have components that are connected in a line, one after the other, like beads on a string. An example is cheap Christmas tree lights. Each light is connected to the same wire as the one before it One of the main properties of a series circuit is this: the voltage experienced by the circuit is the sum of all the voltages passing through all the components, while the current stays the same through each of the components. This means that a strand of cheap Christmas tree lights uses no more current, but draws higher voltage. Series circuits are extremely easy to construct, but they do have a major draw back: if one of the components fails, the entire circuit will be broken. Please see the diagram below:



Parallel circuits are slightly more complex than their series counterparts. In a parallel circuit, each component is attached to a loop, and these loops are connected together. In this way, if one component fails, there is a connection to the next component, so the circuit as a whole still functions. In parallel circuits, the voltage across each component is the total voltage. However, current through each component is added together to find the

total. Thus, a parallel circuit will only draw as much voltage as the largest component, but each additional component will draw a greater current. Please see the diagram below:



Description: Your connectable battery holder can be used to form simple series and parallel circuits. It accommodates D-cell batteries, which are not included.

To form a series circuit, take at least two of the holders. You will notice metal tabs on the rear, as well as small brackets molded into the design. These brackets fit together. To attach the units, slide them together from the top and bottom. It may take a bit of pressure to get them to fit together properly. When fitted properly, you will notice that the pieces are held together tightly. In addition, the metal electrodes are in contact. This allows electricity to flow from one battery into the other in series. Any number of battery holders can be connected in this fashion.

If parallel circuits are more your style, this kit will accommodate you as well. You will notice small tabs on the sides of the holders, with metal electrodes. On the other side of the holder are slots. To construct a parallel circuit, take at least two of the holders, and line them up such that the positive and negative terminals are on the same side. Then, slide the tabs into the slots on the other battery holder. The electrodes from each should be in contact, and the two holders will be attached tightly. You have just created a parallel circuit! Any number of battery holders can be connected in this fashion.

Warranty and Parts:
We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain lead or small parts that can be choking hazards. Adult supervision is required.