

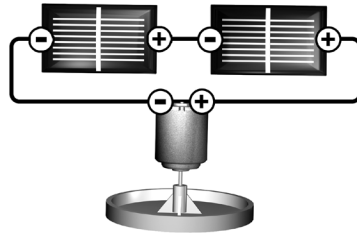


# Tips for Building Solar Electric Circuits



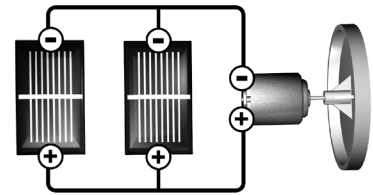
Pa can't remember how to wire solar cells & modules. The acronym "SAV PAA" equals "Series Adds Volts" and "Parallel Adds Amps."

## SAV = Series Adds Volts



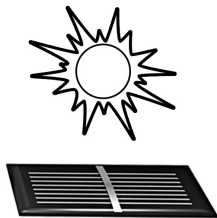
To increase VOLTAGE (electrical pressure) connect red (+) to black (-). The voltage of the cells is added together. The total current (amperage) is the same as a single cell.

## PAA = Parallel Adds Amps



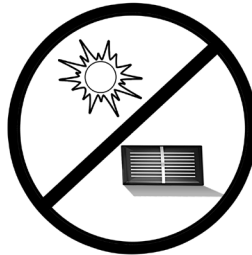
To increase AMPERAGE (electrical current) connect red (+) to red (+) & black (-) to black (-). The amperage of the cells is added together. The voltage is the same as a single cell.

## Face the Sun



A direct, 90 degree angle between the sun and the cells delivers the greatest power.

## Don't Angle Away



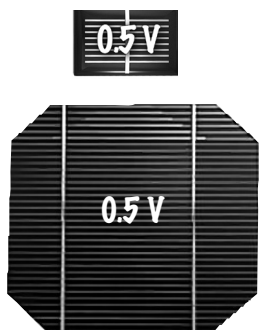
Make sure all the solar cells are facing the sun directly, especially in series wiring.

## Don't Shade the Cells



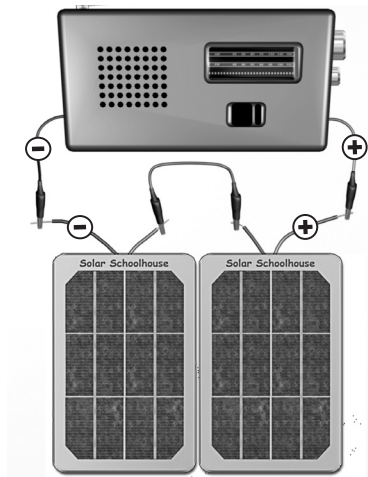
Even a small amount of shade can reduce the electric current in a series circuit.

## Silicon Solar Cells



All Silicon Solar Cells produce 0.5 volts - no matter what size they are. Larger cells deliver more current (amps) than smaller cells.

## Polarity Matters



For most electronic devices, the positive and negative wires from the solar cells must match the wires to the device. Red wires are usually (+) & black wires are (-).

## Circuit Requirements



You need a complete circuit for electricity to flow. Check wire connections if the circuit doesn't work. Every load also needs both the right voltage and enough current.