

## The Protoboard

The protoboard is used to build, test, and debug temporary circuits. More permanent circuits would be wire-wrapped or placed on a printed circuit board. The protoboard allows you to wire together your prototype design which can then be placed at an analysis station like the C.A.D.E.T. trainer which can provide power, signals, and displays.

The protoboard is divided into three physically separated (no connections) sections. Each section is split in half by a "valley". Your IC chips will span this valley when placed on the board. "Rows" are horizontal groups of five holes that are wired together (connected electrically). Each row is independent of all of the other rows on the board. Columns are vertical groupings of holes on the board (four columns per section). All of the holes in a column are connected electrically **except for a break halfway down the board**.

When wiring your board, try to color code signals as best as possible (5V - red, Gnd - black (or a dark color)). Try to keep an individual signal, which is run to several places, the same color. Do not "stitch" chips into the board since you would then have to rip apart your circuit if you need to replace a chip. Also, face all of your ICs the same direction (all of the notches pointing the same direction) and it will be a lot easier to debug.

