Using Breadboards
If you are not familiar with the type of breadboard displayed in the opening window, READ THIS...

There are 550 different sockets (locations in which a wire may be placed) on the breadboard, but there are only 96 different nodes (electrically equivalent locations).   That means that several individual sockets are actually part of the same node. Which sockets are actually part of the same node?

•   There is a long node that stretches all the way across the top of the board which is generally used as the positive bus. This node is made up of the sockets labeled X1-X47.   If you look at the board, you will see a numbering coordinate system which uses number in the horizontal direction, and letters in the verticle direction.   Locate the socket labeled 'X1'.   All sockets directly to the right of socket 'X1' and ending at socket 'X47' are part of the same node (ie shorted together internally within the board).

•   Similarly, there is another long node extending across the bottom of the board.   This node extends from Y1 to Y47 and is typically used as a ground bus in breadboard designs.

•   The remaining 94 nodes are made up of five sockets each.   The five sockets are arranged vertically.   The five sockets labeled A1 to E1 are part of the same node (ie electrically shorted within the board).   A corresponding node exist on the bottom half of the board (sockets F1 through J1). This pattern repeats all the way across the breadboard.

ICs (integrated circuits) are placed in the vertical center of the breadboard.   Each pin then occupies a single socket in a unique node.   That leaves four remaining sockets in each node available to place wires in.   The four available sockets are located directly above or below the IC pin.

To become familiar with the internal connections within the breadboard, start with an empty breadboard, and connect the +5 volt supply to an output LED using two wires.
(NOTE: DON'T FORGET TO TURN THE POWER TOGGLE SWITCH OFF TO PLACE WIRES, AND ON TO BEGIN A SIMULATION!!!)

The actual breadboard which is simulated here is available from many home electronics stores.