

STEAM CLOWN™ PRODUCTION

What is a BREADBOARD?
(and how do I use it?)
BY JODY CULKIN & makezine.com

A SOLDERLESS BREADBOARD IS A PLASTIC BOX FULL OF METAL STRIPS, WITH A GRID OF HOLES ON TOP. IT IS USED TO BUILD AND TEST CIRCUITS QUICKLY.

THE HOLES IN THE BREADBOARD ARE CONNECTED IN PATTERNS THAT ALLOW YOU TO ATTACH COMPONENTS TO EACH OTHER AND TO POWER AND GROUND.

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COMPONENTS ARE PARTS USED TO BUILD OUR CIRCUIT.

WE WILL ATTACH A BATTERY OR OTHER POWER SOURCE TO POWER AND GROUND TO RUN OUR CIRCUIT.

GENERALLY A BREADBOARD HAS A SLOT DOWN THE MIDDLE CALLED A TRENCH. THE WIDTH IS DESIGNED SO MANY INTEGRATED CIRCUITS (ICs) FIT RIGHT ACROSS IT.

THE HOLES, CALLED TIE-POINTS, ARE THE SAME DISTANCE APART AS THE PINS ON MANY ICs AND OTHER COMPONENTS.

THERE ARE OFTEN 2 LINES OF HOLES ON EACH OF THE LONG SIDES OF THE BOARD THAT GET ATTACHED TO POWER AND GROUND. THESE LINES ARE CALLED DISTRIBUTION BUSES.

ROWS OF FIVE CONNECTED TIE-POINTS RUN PERPENDICULAR TO THE BUSES. TO CONNECT COMPONENTS, PUT THEIR LEADS IN TIE-POINTS IN THE SAME ROW.

HERE A RESISTOR IS CONNECTED TO POWER AND TO THE ANODE OF AN LED. THE OTHER LEAD OF THE LED ATTACHES TO GROUND.

YOU CAN MAKE CONNECTIONS BETWEEN ROWS OF TIE-POINTS BY INSERTING SHORT PIECES OF WIRE CALLED JUMPERS BETWEEN HOLES IN DIFFERENT ROWS.

USING A SOLDERLESS BREADBOARD ALLOWS YOU TO GET YOUR CIRCUIT UP AND RUNNING QUICKLY SO YOU CAN TEST IT. ONCE YOU HAVE IT JUST RIGHT, YOU CAN BUILD A MORE PERMANENT VERSION ON PERFBBOARD OR A PCB!

WHAT IS A BREADBOARD?

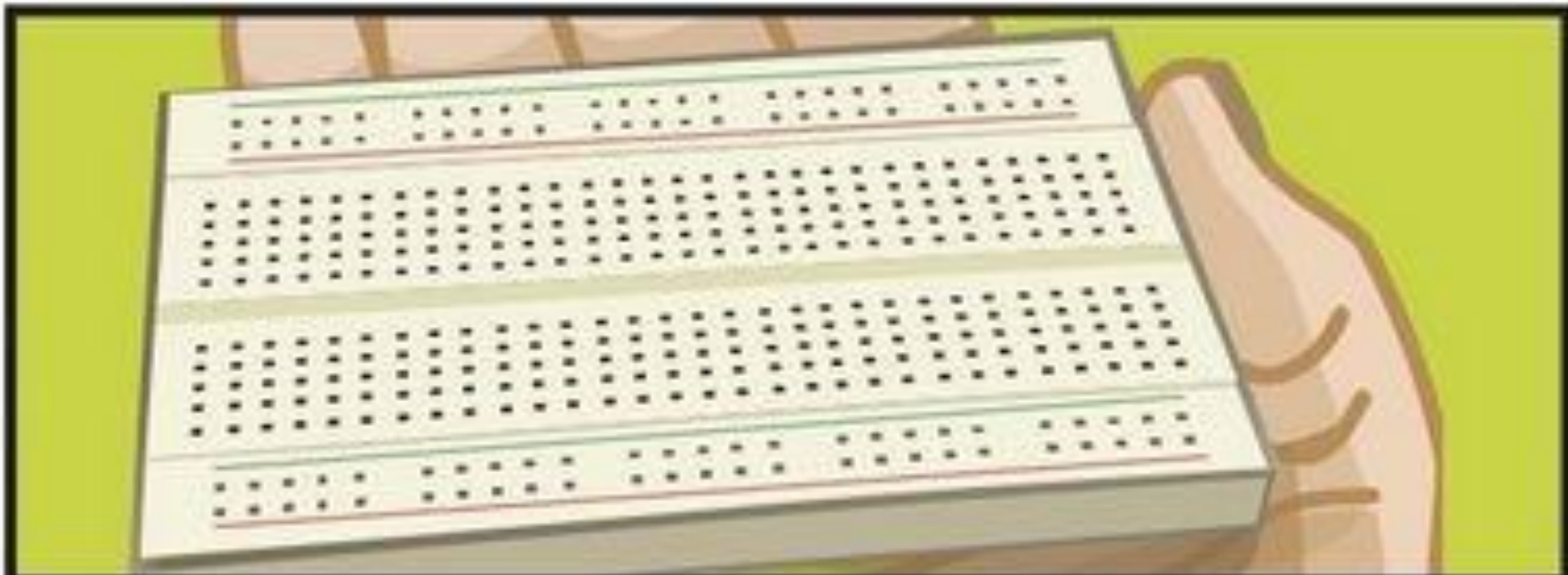
Source: <http://makezine.com/2016/12/22/breadboarding-quick-tips/>
<https://i1.wp.com/makezine.com/wp-content/uploads/2016/12/breadboardworkshop.jpg>

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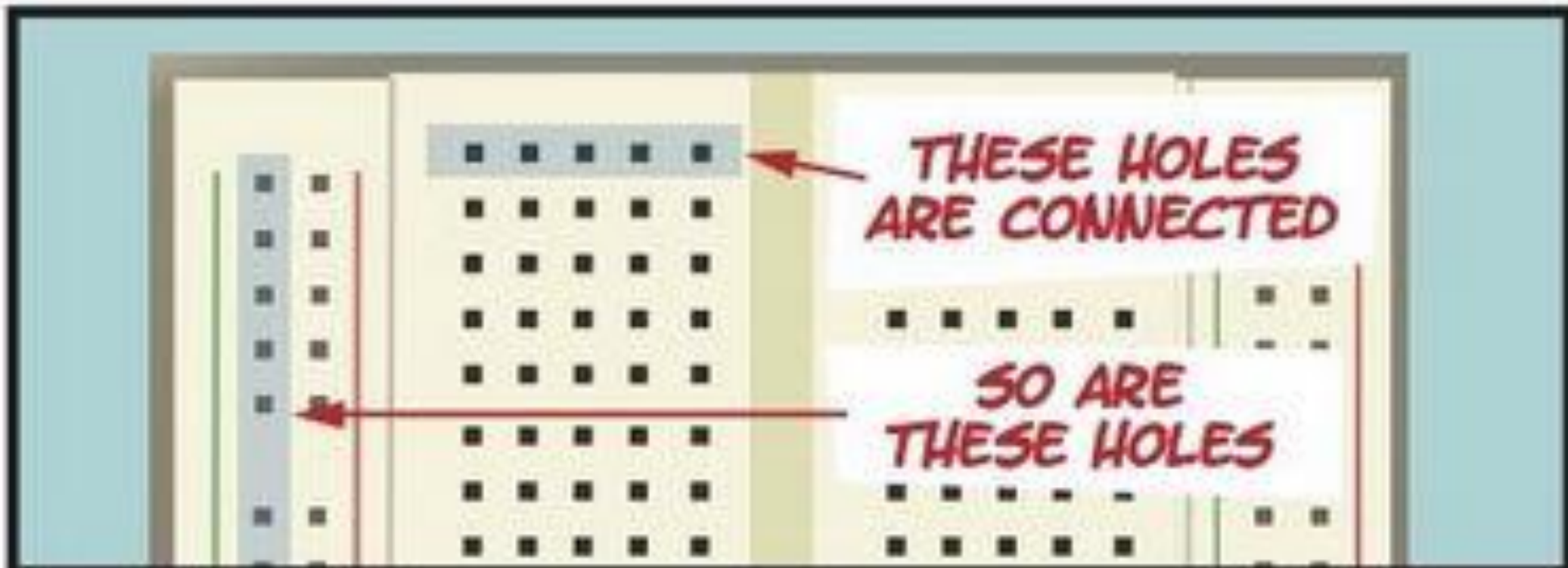
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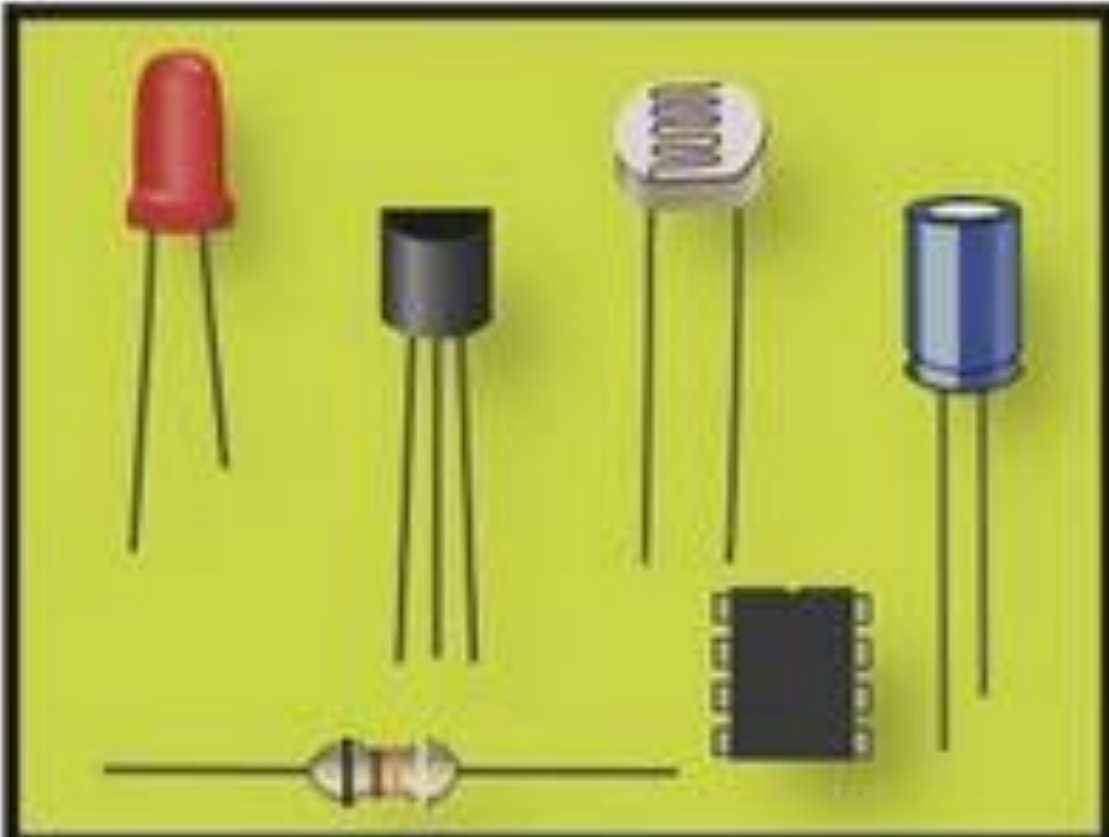
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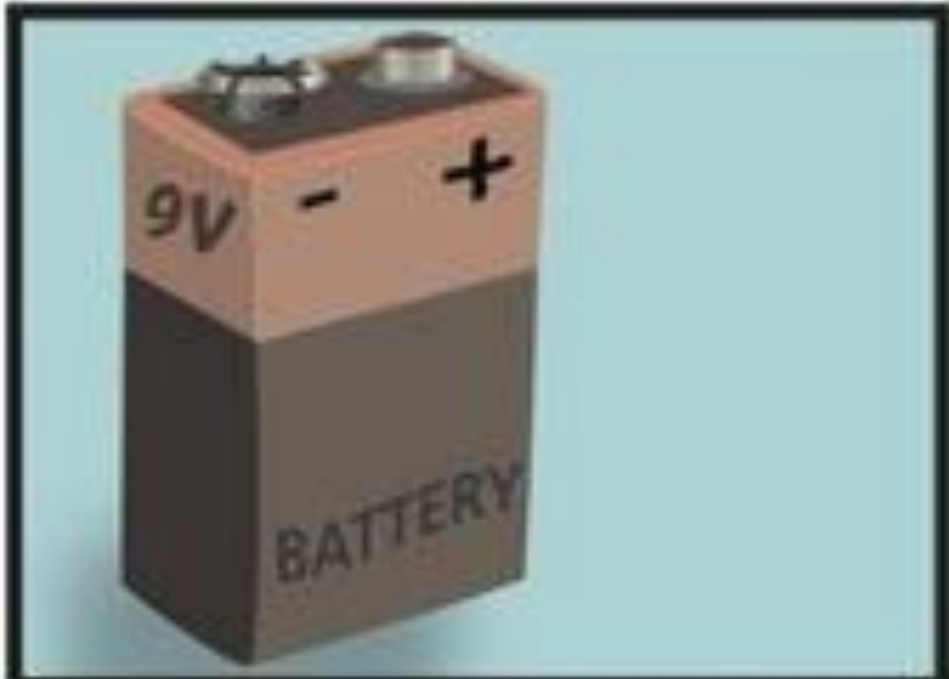
THESE HOLES
ARE CONNECTED

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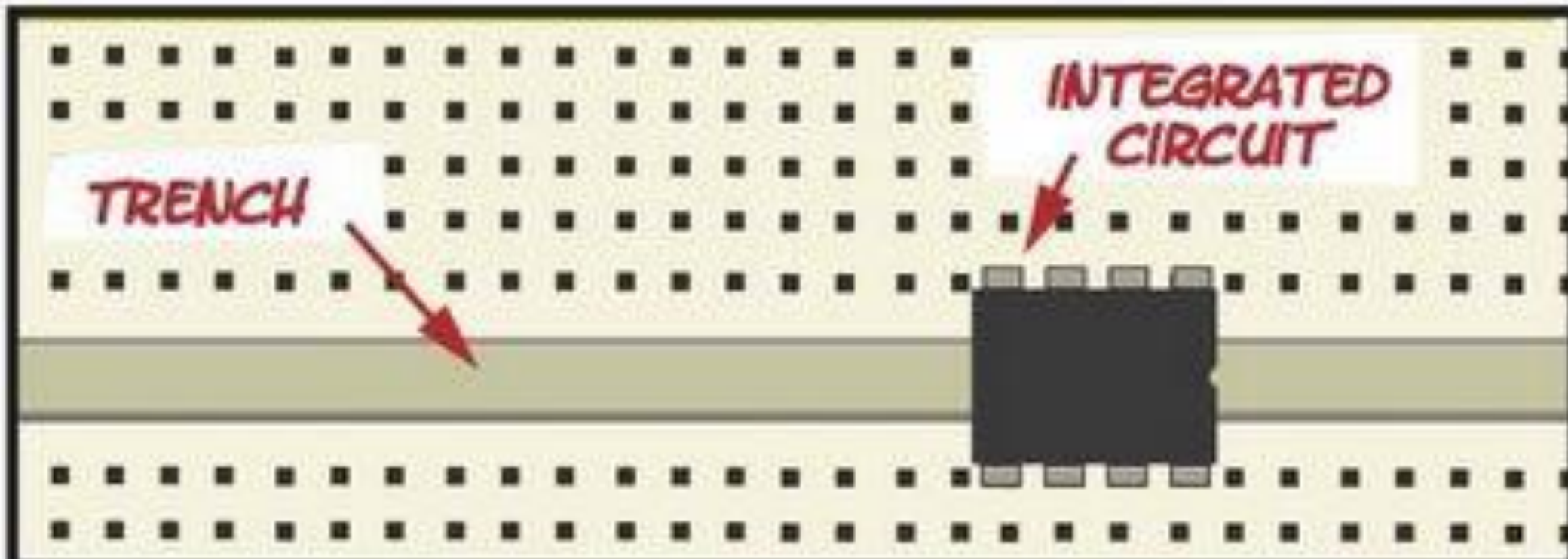
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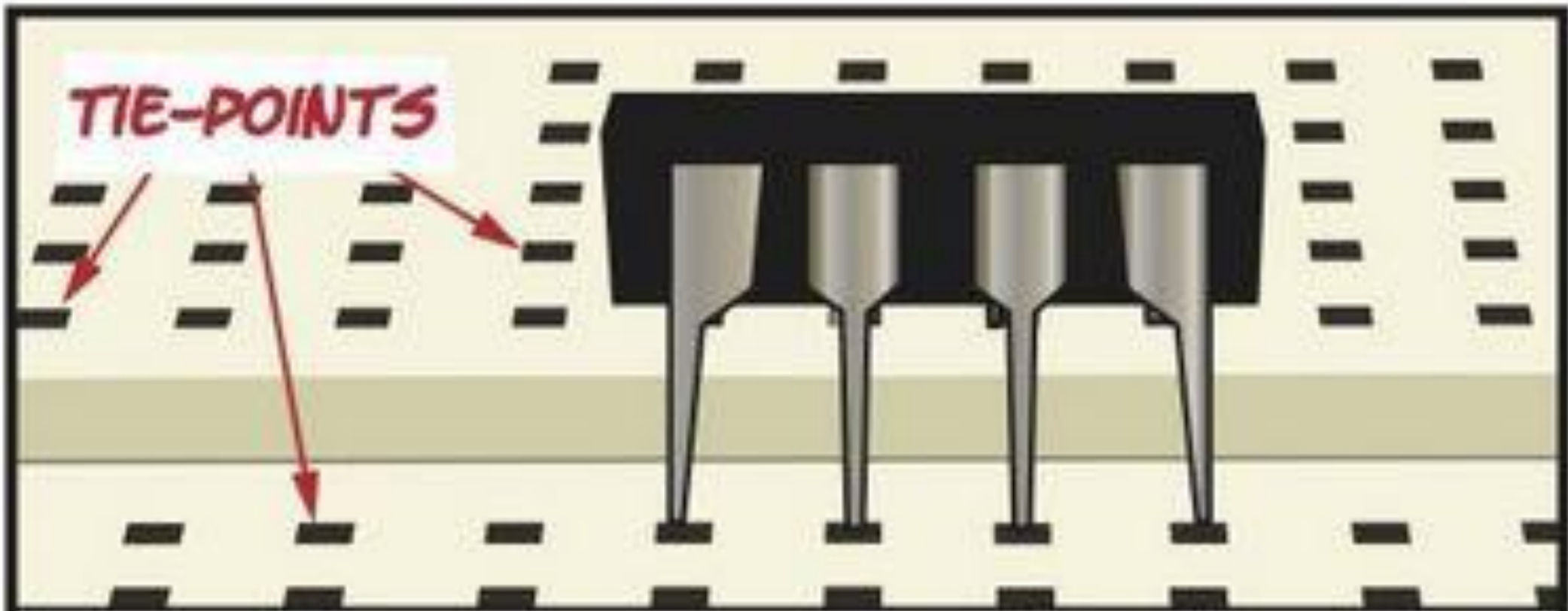
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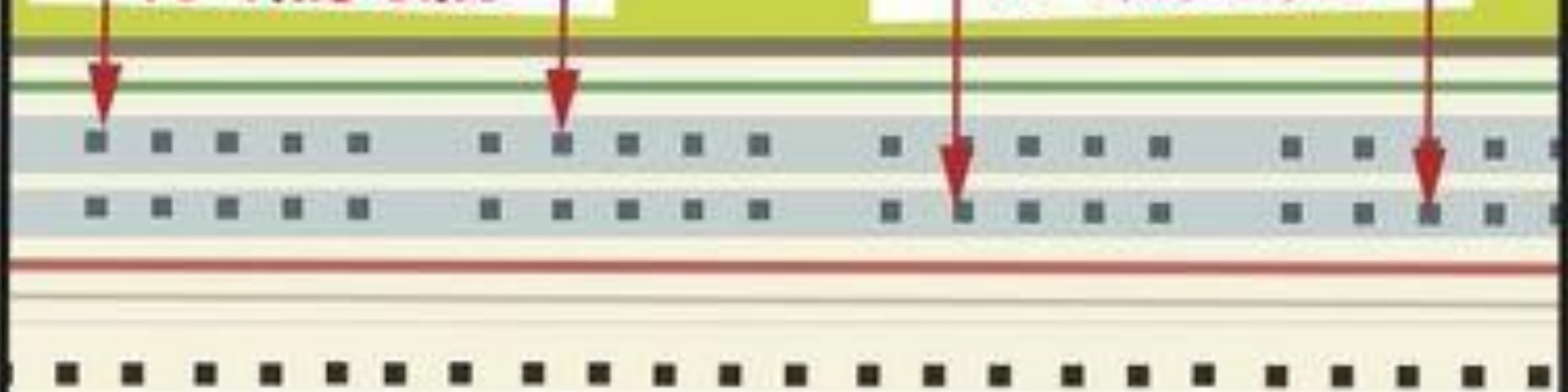


TIE-POINTS

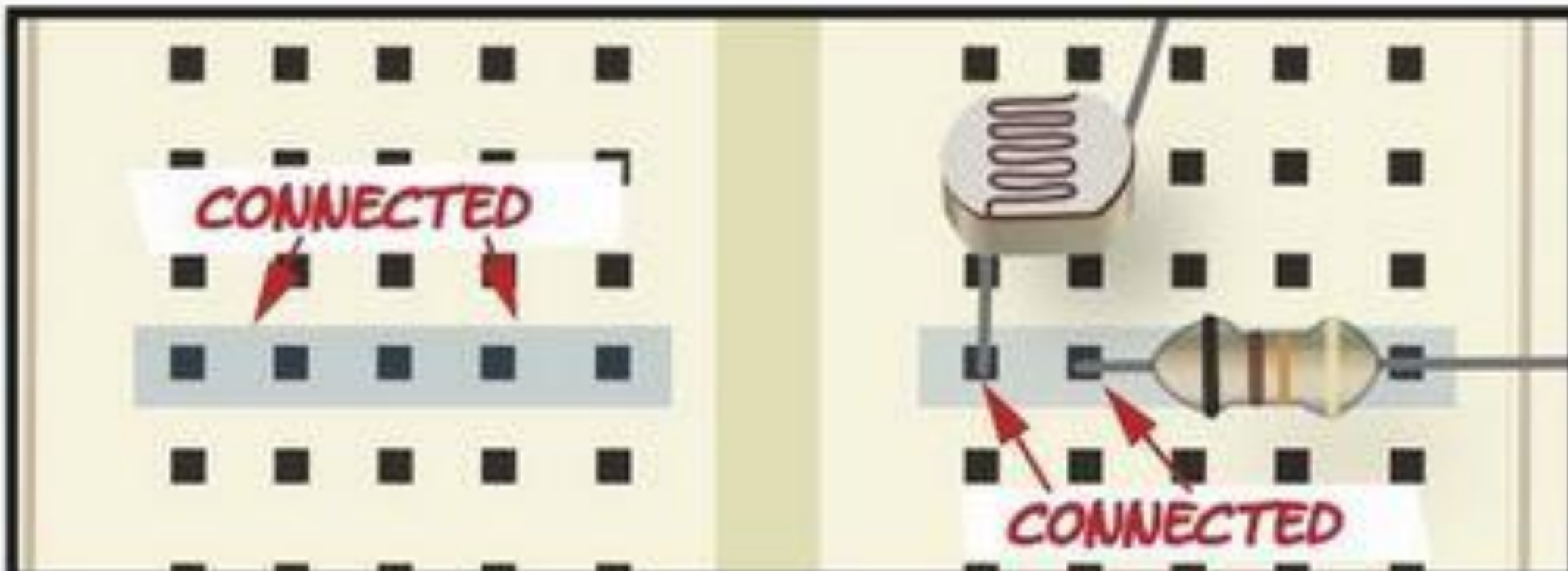
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GROUND ATTACHES
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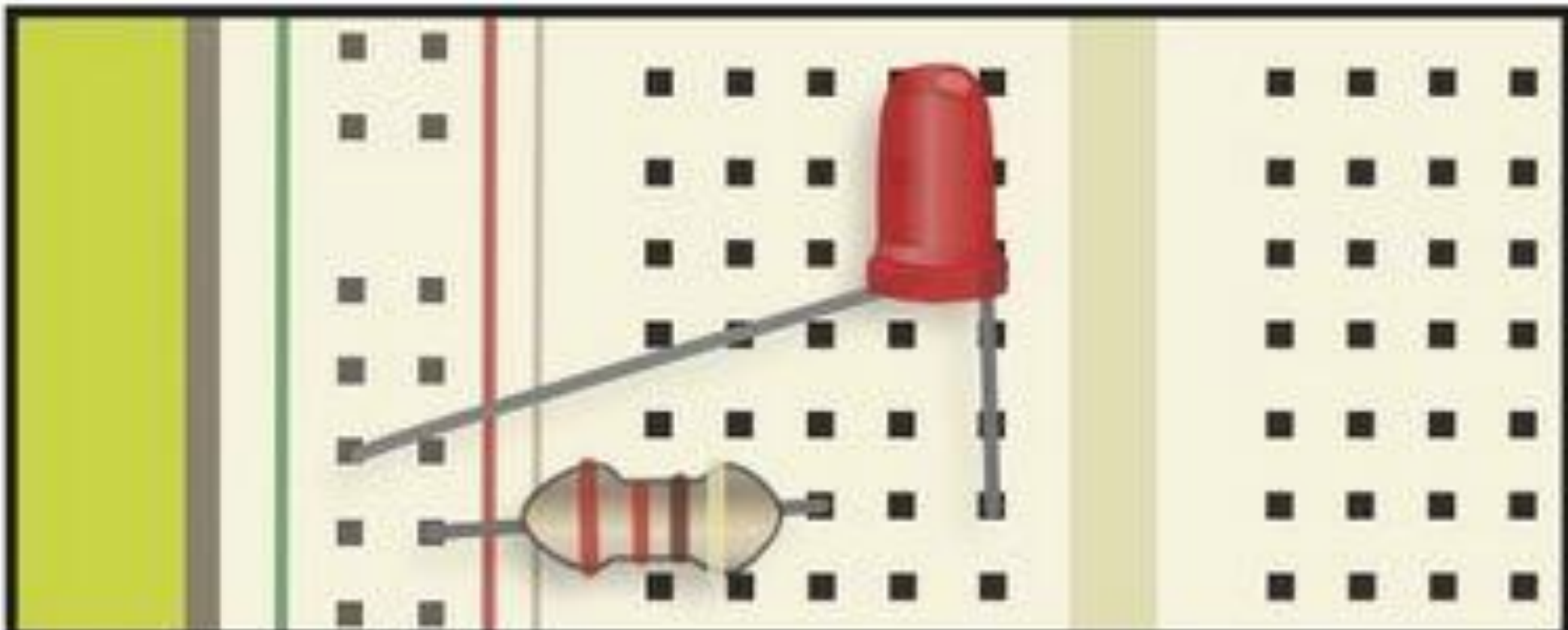
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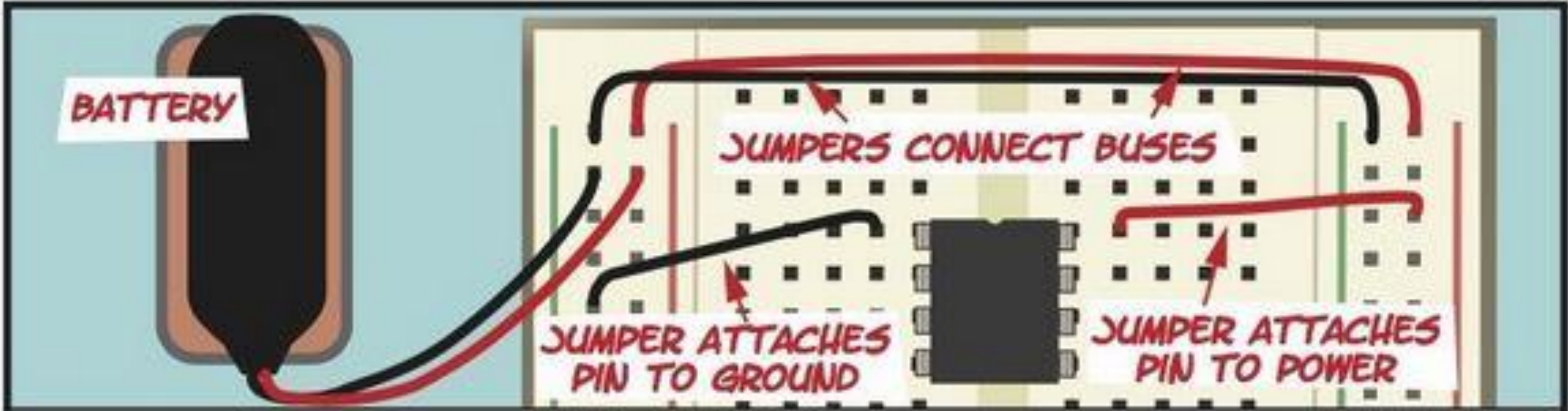
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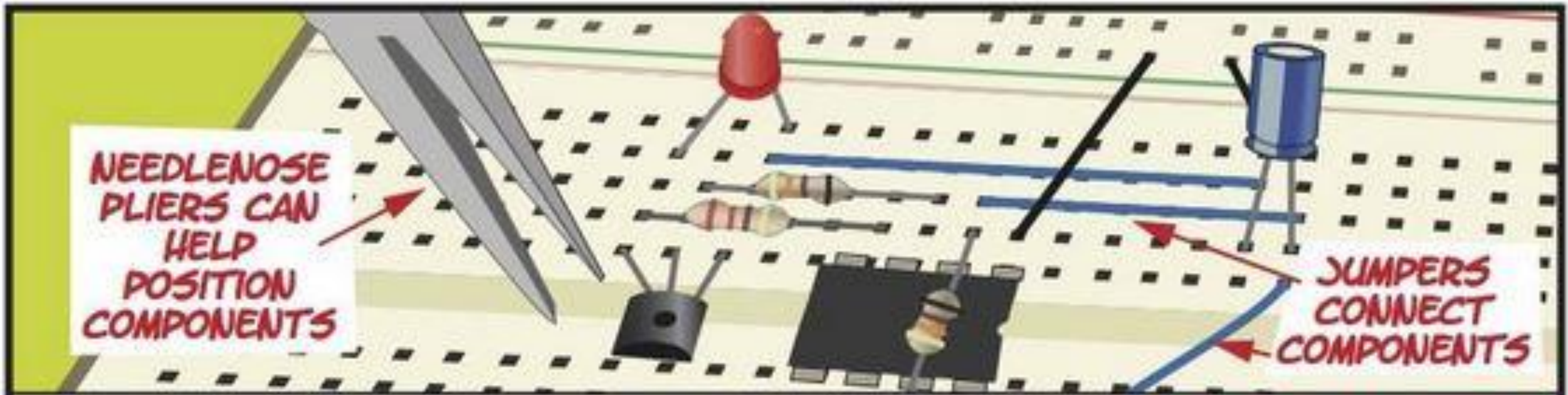
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