

Conductivity Tester Kit

Parts List (To make 5 conductivity testers, included in kit are):

- One assembled conductivity tester (no 9V battery)
- 4-2" black wires
- 4-2" red wires
- 4- 9V battery clips
- 4 LEDs
- 8 blue terminals
- 4 popsicle sticks
- 4 resistors

Assembly - You will need a hammer, needle nose pliers, wire stripper, and electrical tape. (Optionally to insure good connections, solder and a soldering iron can be used.) See Assembly Photo on reverse side. (The assembly instructions start from the top left, go down the left column, and then up from the bottom of the right column.)

- A. Start with the 2" piece of wire. Steps A-D are done to all 8 wires.
- B. Strip ~1/4" of insulation from one side of all black and red wires, and then strip ~1/2" from the other end of each wire.
- C. Slide blue terminals on the 1/4" bare wire and crimp on the wire. (A dull wire cutter can be used to gently crimp the terminal or, if all else fails, a good smash with a hammer on a hard surface will do the trick.)
- D. Optional: Pound the bare 1/2" side of the wire flat.
- E. Strip ~1/2" from each lead of the 9V battery clip.
- F. Find the long lead from the LED.
- G. Bend the long lead of the LED back on itself creating a small loop. (Do not do this to the short lead yet as we want to make sure we attach this particular lead to the red wire of the 9V battery clip.)
- H. Twist the red wire of the 9V battery clip around the loop from the LED you just made and crimp the wires together.
- I. Bend both leads of the resistor back on themselves, leaving them partially open.
- J. Attach a red and black wire (with terminals) to a popsicle stick. Electrical tape is best, but cellophane tape will do the job. The flat part of the wires should be parallel to each other. These exposed flattened wires will be the parts that you will stick into the solution to tell if it is conductive. They should look kind of like an electrical plug.
- K. Attach one end of the resistor (doesn't matter which end) to the short end of the LED and crimp the wires together.
- L. Attach the black wire from the 9V battery clip to the terminal of the black wire and twist it on several times. Also attach the other end of the resistor to the terminal of the red wire and crimp on the terminal. At this point it is a good idea to test to see if it works. Connect a 9V battery to the clip and short the two exposed leads by connecting a conductive wire between them or touching both prongs to a metal tool. If the LED lights up, you have done everything right! Also, if you are able, a little solder on each wire connection will guarantee they do not come loose.
- M. Tape all connections down to the popsicle stick (again electrical tape is preferable) so they stay in place and don't short circuit. Tape a 9V battery onto the tester. When not in use keep the battery clip disconnected from the 9V battery.

Conductivity Tester Kit

