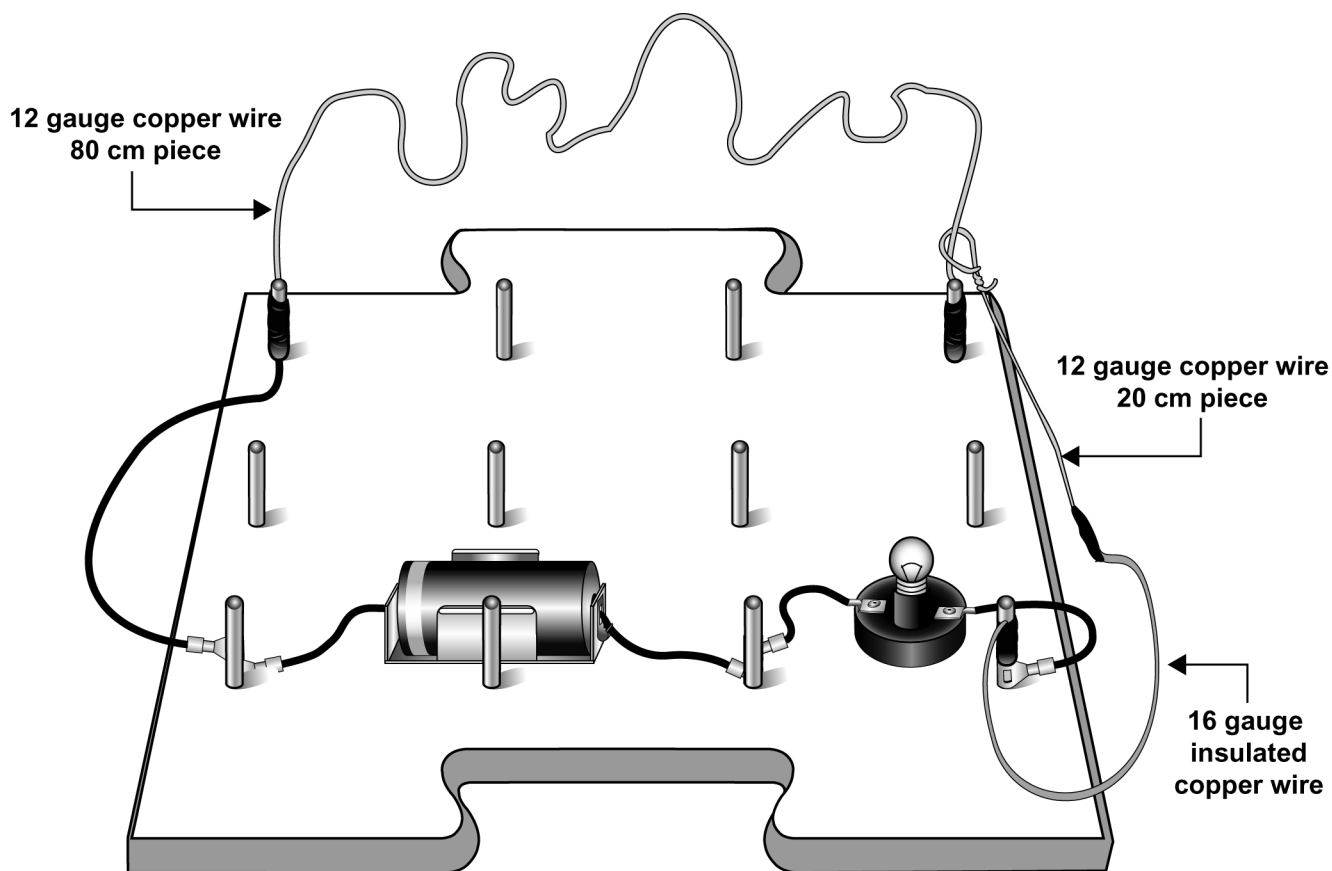


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The Steady Hand Game

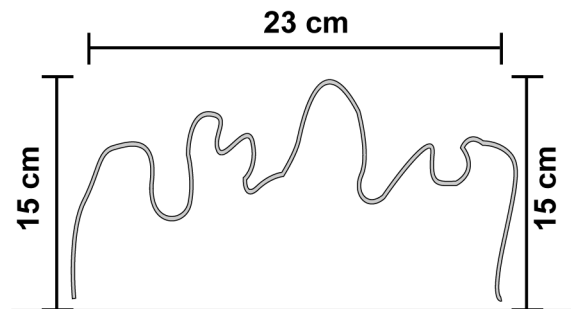
Do you have a steady hand? This easy-to-build game challenges your manual dexterity. Can you move a small loop of wire over a complicated maze without tripping the light bulb? Try it and see!

1. Gather these materials

- Electric Circuits Set: electricity table, one battery with holder, one light bulb with holder, one long connecting wire (brown)
- 1 meter of 12-gauge copper wire. Wire must not have an insulated coating. This wire can be purchased where picture hanging supplies are sold.
- 50 centimeter-long piece of 16-gauge insulated copper wire. This wire can be purchased at a hardware store.
- Electrical tape
- Wire stripper tool
- Permanent-ink marking pen
- Metric ruler or measuring tape

2. How to build the game

1. Place the battery, light bulb, and long connecting wire on the electricity table as shown in the diagram on the previous page.
2. Cut a 20-centimeter piece from one end of the 1 meter-long piece of 12-gauge copper wire.
3. Bend one end of the 20-cm piece in to a loop with a diameter no larger than a dime. The smaller the loop, the more challenging the game! Twist the wire to secure the loop. You have just constructed the wand for your game board.
4. Strip 2 cm of plastic coating from each end of the 50 cm length of 16 gauge wire. (Your teacher may help with this part).
5. Wrap one end of the exposed wire around the base of your wand and secure with electrical tape.
6. Wrap the other end of the exposed copper wire around the right front corner post of the electricity table. (The light bulb wire should also be connected to this post). Secure with electrical tape.
7. Measure 15 cm in from each end of your remaining 80 cm piece of 12 gauge copper wire. Mark the two spots with permanent ink. DO NOT cut the wire.
8. Make a 90° bend in the wire at each spot so that the wire is shaped like a wide, upside-down U.
9. Bend the long horizontal section of the wire into a series of hills and valleys (see illustration). Adjust the bends until the two 15 cm “legs” of the wire are 23 cm apart.



10. Place one of the 15-centimeter “legs” alongside the left, rear post of the electricity grid. The long connecting wire should be attached to this post. Secure the leg with electrical tape.
11. Slide the loop of your wand over the other leg of the 12-gauge wire.
12. Use electrical tape to secure this leg to the right, rear post of the electricity grid. Make sure that the tape covers the entire post.
13. Make sure that the loop in the wand will slide down the post. The loop should be placed in this position when the game is not in use.
14. Now you are ready to play! Using one hand, move the loop in the wand over the hills and valleys—but don’t let the loop touch the copper wire! Try to make it all the way across without lighting the bulb.

Variation: Inexpensive buzzers can be purchased at electronic or hobby stores and placed in the circuit alongside the bulb.