CIRCUIT GLOW UP

Create a fun paper circuit with three different lights that glow.

MATERIALS:

- 3 Lilypad LEDs (example)
- Conductive copper tape (example)
- Coin cell battery (CR2032)
- Cardstock (template attached)
- Tracing or waxed paper
- Conductive metal coin (e.g. penny)
- Scissors
- Pencil

METHOD:

1. Cut out the hatched areas on the template and cut off the lower portion of the template along the dashed cut line.
2. Fold the template in half hamburger style with the template design on the outside along the dashed fold line.
3. Trace the inside of each icon cutout and trace a full-width horizontal line along the cut line. Label this line “A”.
4. Draw another full-width line, parallel to the cut line, ~1 in. below the cut line. Label this line “B”.
5. Unfold the template.
6. Draw a full-width horizontal line connecting the centers of each icon cutout (magnifying glass, beaker and gear). Label this line “C”.
7. Draw three vertical lines from the center of each icon down to the horizontal cut line, extending each line ~0.5in. past the cut line. Label each line “D”, E” and “F”, left to right, respectively.
8. Place a piece of copper tape along line C and line B.
9. Affix the positive terminal of the lilypad LED to the center of each icon cutout using a small piece of copper tape.
10. Place a piece of copper tape on lines D, E and F overlapping the negative terminal of each lilypad LED. Make sure the end of the copper tape on lines D, E and F doesn’t touch line B.
11. Fold a ~1 in. piece of copper tape back on itself to make an adhesive loop. Affix the coin cell battery using the adhesive loop to the left of the first icon on line C with the positive terminal face down.
12. Place a piece of copper tape overlapping the center of the battery down to intersect line B.
13. Place the penny at the intersection of lines D and B to create a closed circuit – the first icon’s lilypad LED should glow.
14. Slide the penny to the right on line B; as the penny crosses lines E and F, each lilypad LED should glow as the circuit is closed.
15. Add a piece of tracing or waxed paper to the backside of the icon cutouts to create a glowing effect as you use the circuit.

TAKE IT BACK TO CLASS:

- Encourage students to think creatively and design their own template.

SOURCE:

“DIY “Science is cool” interactive card” from @moonshotkidz

NOTES

BURNS McDONNELL

FOLD FOLD

BURNS McDONNELL

CUT CUT