



LED Magic Lantern

A project that combines traditional crafting with copper tape circuitry and storytelling.

Project Type: Creative, tactile

Group/Individual: Individual

Lesson Plan Audience: Maker Mentor, Maker

Time: 2 hours

Hard Skills: Circuitry, Building, Sculpture, Engineering,

Soft Skills: Design Concepts, Mathematics, Project Planning, Problem Solving, Experimentation

Ideal # of Participants: 1 to 10

Age Group: 12+

Ideas for Taking it Further: Tell a story with your lantern - each side can be a step in your narrative!

Difficulties/Tips:

May be too difficult for younger kids. Multi-LED circuits can be tricky.



Materials:

Shoe boxes
Construction paper
Printer paper, tissue paper, wax paper or other thin paper
Ruler
Scissors
LEDs
Coin cell batteries
Copper tape
Markers, crayons, or colored pencils

Steps:

1. Brainstorm – think about a space with a clear foreground, middle ground and background. For instance, a cityscape background, with a bridge in front of that, and some waves in front of the bridge. Think about the shapes you’re creating – do they create a sense of movement? Are they interesting to look through? Are they organic, nature-based forms or rigid, man-made forms?
2. Place your shoebox so the open side is facing you. Measure the height of your shoebox. Cut your paper to fit snugly inside the box, but leave a little extra room on each side to glue it to your box. Fold the extra paper behind.
3. Draw it out! Get two sheets of construction paper, and one sheet of printer paper. The printer paper will contain the background layer.
4. Cut out the shapes from the construction paper – the printer paper should stay the same size as the box. Leave a little extra room at the bottom of each shape as you’re cutting it – you’ll fold that over to make a tab so it can stand.
5. Decide where you want your LEDs on the back wall of your diorama. Use the scissors and poke holes big enough to fit LEDs in those spots.
6. Wire your LEDs – follow the included diagram to make multiple lights power off the same battery. Pay attention to which side is the positive and negative.
7. Glue in your background using the tabs you made so it sits a little in front of the LEDs. Next, glue in your middle ground, and finally your foreground, making sure the tabs are folded back to glue down.
8. Turn off the lights and admire your magic lantern!



