



Backpack Light

Have you ever dropped your pencil inside your bag and couldn't find it? Make a backpack light to illuminate your bag so your stuff is always in sight!

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INTRODUCTION

Make this backpack light. Be seen on the trail, or use it as a handy source of light to dig small objects from the bottom of your pack! The entire project takes under an hour and requires just basic sewing skills to complete.



TOOLS:

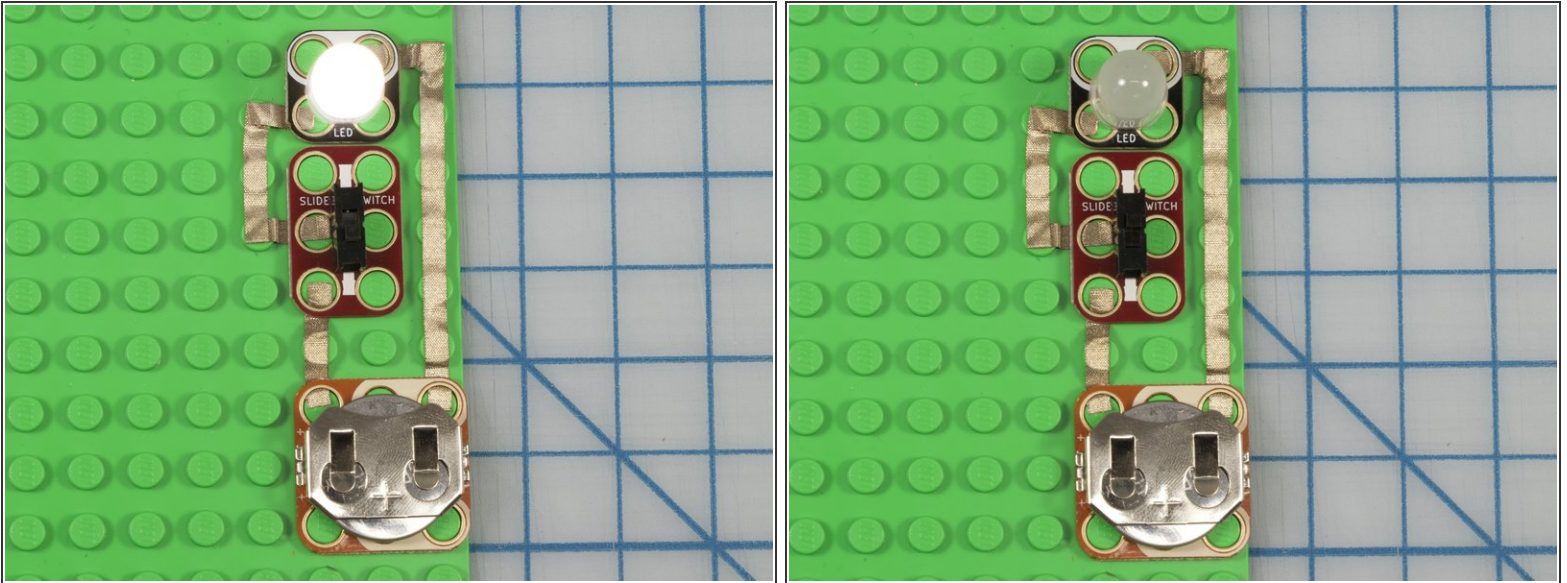
- [Scissors](#) (1)
 - [X-ACTO Knife](#) (1)
 - [Pen or Marker](#) (1)
- Something that writes on felt
- [Printer \(to print out the template\)](#) (1)



PARTS:

- [Crazy Circuits Starter Sewing Set](#) (1)
- [Sewing Circuits Kit](#) (1)

Step 1 — Make a circuit prototype



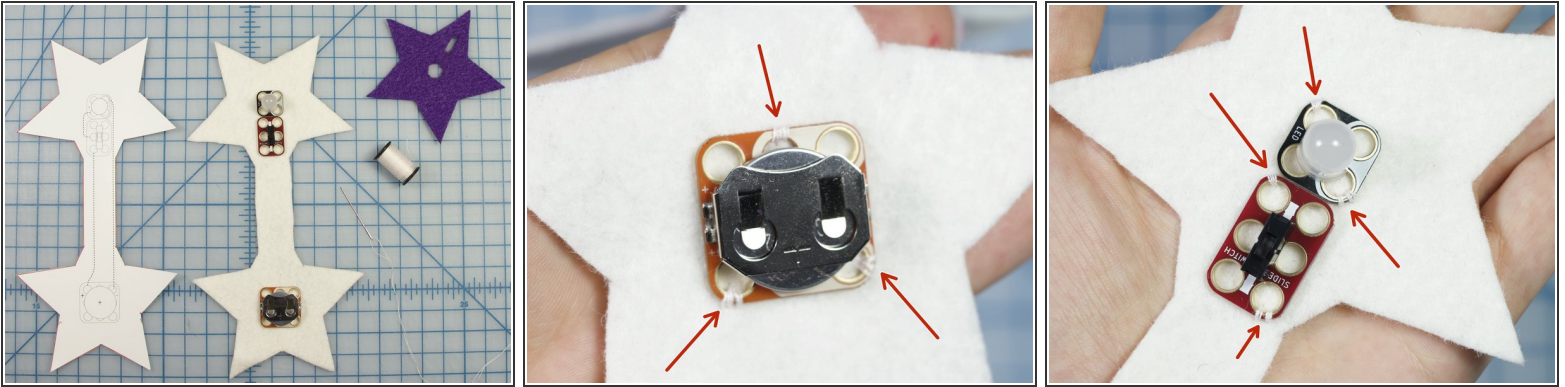
- Prototype your circuit with lego and Maker Tape

Step 2 — Gather supplies



- Cut out the template
- Trace the shapes onto the felt. (The shape with the two attached stars, pictured in white, should be in contrast to the star shape, pictured in purple.)
- Cut out the felt shapes

Step 3



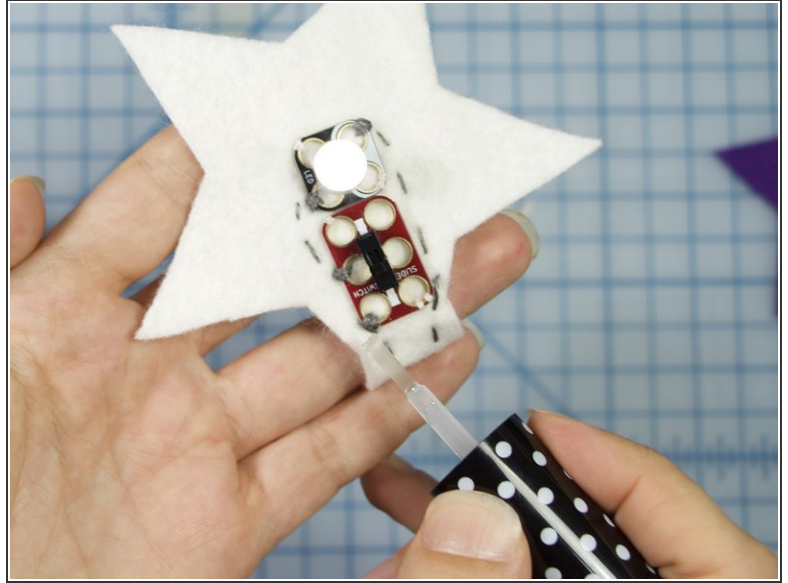
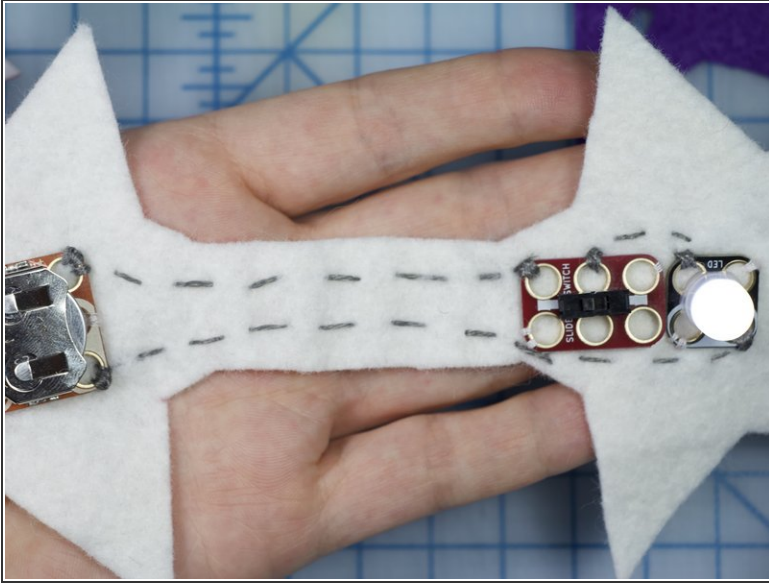
- Place your crazy circuits according to the diagram on the template
- Use a needle and thread to tack the crazy circuits components in place as shown.

Step 4



- Using conductive thread, stitch a secure connection to the battery's positive hole.
 - Tip: Use a series of finishing knots for this step. To create a finishing knot, pass the needle back through each stitches loop just before you tighten the stitch. This will help prevent your knot from untying.
- Sew a running stitch to the switch's bottom hole and secure with multiple finishing knots. Trim the thread.
- Starting with a new piece of thread, stitch a secure connection from the switch to the LED using the same method.

Step 5



- Starting with a new piece of thread, connect the negative hole of the LED to the negative hole of the Battery.
- Tip: Be sure that the thread doesn't go underneath the switch component so that the metal pads are not connected accidentally.
- Test your circuit by sliding the switch
- When all connections are working, seal your knots with clear nail polish or a similar adhesive like super glue.

Step 6



- Place the small star over the LED and switch
- Place the interior star underneath the main star
- Attach the keychain around both pieces, just like you would add a key to the loop.

Step 7



- Now it's time to decorate!
- Use embroidery floss to add stitches and embellishments.
 - Tip: Embroider the top star before connecting it to the project for easy stitching.
- Test your circuit one more time before the next step.

Step 8



- Whip stitch around the edge of your star to hold the project together.
- Tip: To do a whip stitch, insert your needle through the same side of the felt for each stitch, and allow the thread to wrap over the edge.
- Add a few more stitches to tack the top star in place.

Step 9



- You're ready for backpack bling!

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You will need:

- Felt in 2 or 3 colors
- Keychain Ring (1 inch or larger)
- Needle and thread (that matches the main felt color)
- Embroidery Floss/Thread (accent color) with larger eyed needle
- Clear nail polish (to seal knots)