Light-Up Backpack Tag

Tools, materials, technologies used	Experience level required
Fabric, vinyl, or other durable craft textile	Beginner
sewing tools (needles) and craft tools	Beginner/Intermediate
electroconductive thread, LEDs, batteries	Beginner

Grade Level (of this example)**:** 5 - 12

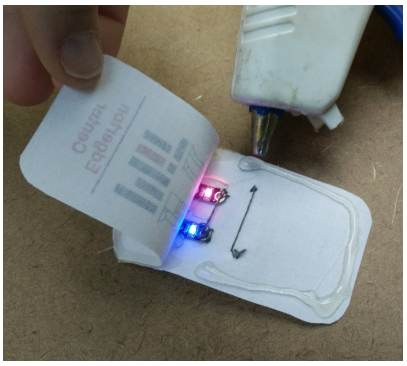
Content Standards: see ***Possible Content Explorations,*** below

Summary of Project:

Students will design and make a light-up backpack tag that meets design criteria designated by the teacher. They will use LEDs and other craft materials to achieve desired effect. Students will work individually to design, wire, and make their backpack tags. The finished backpack tags can be displayed on each student's backpack for presentation.

This project is a simple introduction to sewing and circuits, and can be a great early-in-the-year or new-to-making activity. It can be taught as a quick, straightforward kit build, or a more personalized early experimentation with e-textiles. For beginning sewers, expect to do a lot of hands-on assistance with needle-threading/unthreading.

For possible project expansion and points of entry to content, see below. Also consider using the project as is for a tutorial before more complex LED-decorated projects.



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Possible Content Explorations

STEM

- Geometry - use cardstock-enforced fabric to design a net that folds into a small polyhedron with both “on” and “off” positions
- Life science - create bioluminescent organisms
- Physical Science - simple circuits (ready to use as is)
    - with extra time/previous circuit experience, offer buzzers, switches, etc.

ELA/Social Studies

- light and dark as literary symbols - create a two-sided backpack tag that uses light vs dark imagery to represent a story or character with prominent “light” and “dark” sides

Resources

- Conductive thread - available on adafruit.com

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