



STEPS
Engineers
Week

STEPS Engineers Week

HEX ALLEN

AND THE CLANKSMITHS



BY JASMINE FLORENTINE
ILLUSTRATED BY EBONY GLENN

Sponsored by



An Roinn Breisoideachais agus Ardoideachais,
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ABOUT

The Engineers Ireland STEPS team have paired up with Jasmine Florentine, author & project illustrator of Hex Allen and the Clanksmiths, to share **Hex Allen's Guide to Defeating Monsters**! Join Hex and her friends as they use science and engineering to get out of a bunch of scrapes, and make some fantastic gadgets.

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BOOK SUMMARY

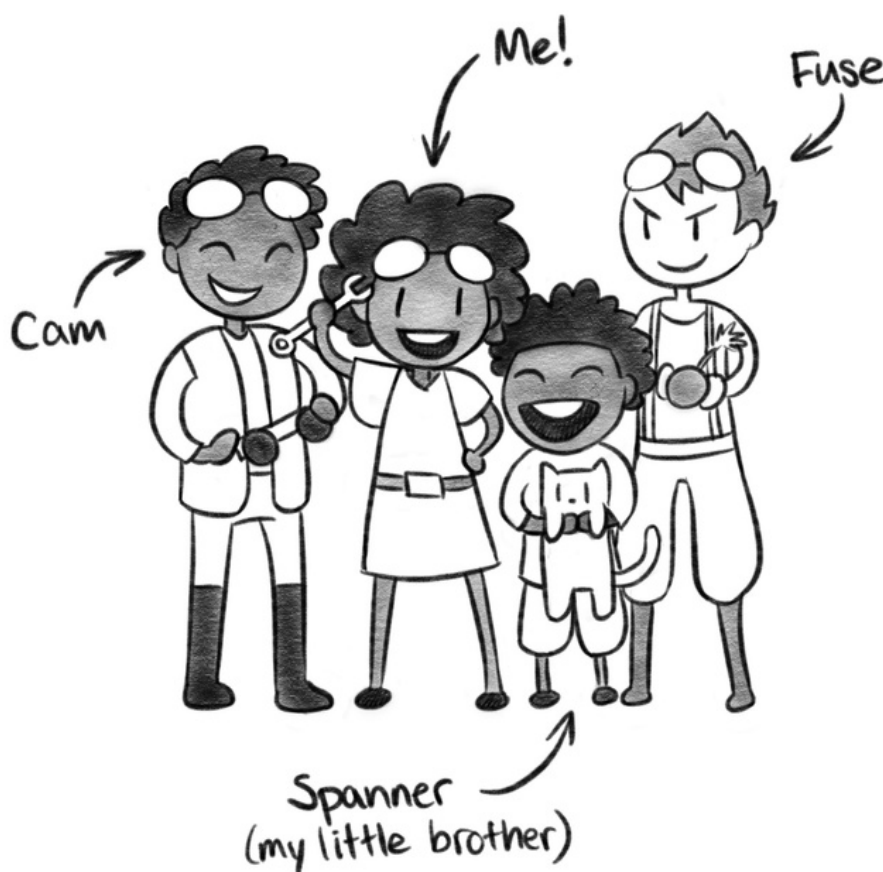
Hex Allen can't do magic - a huge problem when everything from lights to locks is powered by simple spells that everyone (save a few unfortunate "Undevelopeds") can do. After years of feeling useless, Hex seizes the chance to change her future by journeying to the Wishing Wurm, a legendary dragon that will grant a single wish once a century. Unfortunately, Hex isn't the only one after the wish, and every rival wish hunter has magic on their side. Every rival except the Clanksmiths, Cam and Fuse. Like Hex, they can't do magic, but they've learned to build clank, creations made using the mysterious, forgotten arts of science and engineering.

After a fairy fiasco throws Hex and the Clanksmiths together, they agree to cooperate - for the time being. With the Clanksmiths' know-how and Hex's creativity, they outsmart monsters with everything from LEDs to electromagnets to water balloon launchers. But as they race to the Wishing Wurm, Hex must decide between her friendship with the Clanksmiths and the wish that would give her a normal, magical life.



HEX ALLEN'S

GUIDE TO DEFEATING MONSTERS



Hi, I'm Hex Allen! My best friends, Cam and Fuse, are Clanksmiths—that means they use science and engineering instead of magic. You see, in my world, everyone can do magic. Well, almost everyone. I can't do it, and neither can Cam and Fuse. That's why they became Clanksmiths instead!

Cam, Fuse, and I have had a lot of adventures together. We used science and engineering to get out of a bunch of scrapes like tricking an ogre and defeating an evil knight. Here's some of the gadgets I made so Clanksmiths like you can build them too!

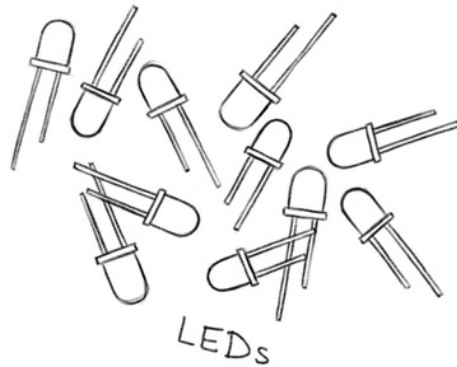
HOW TO TRICK AN OGRE

During my adventure, I got kidnapped by an ogress who wanted me to use magic to make light! Since I can't do magic, I had to trick her into thinking I could...

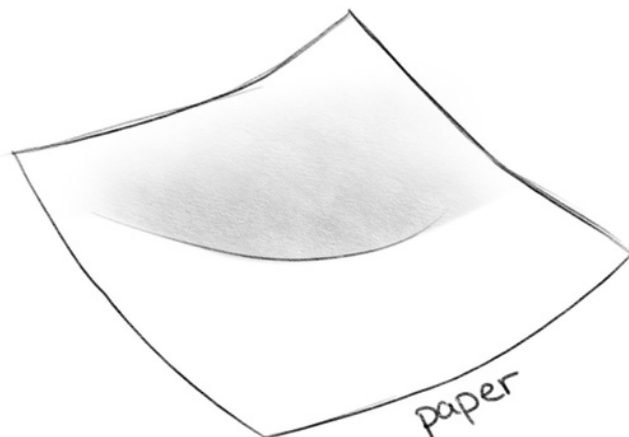
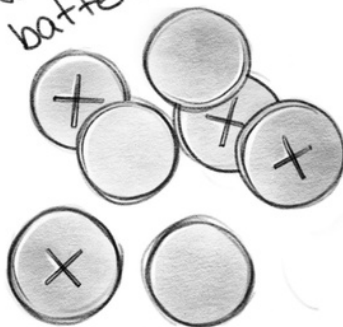
MATERIALS



↓
a cup, bottle, or anything else that lets light shine through also works!



3-volt coin cell batteries

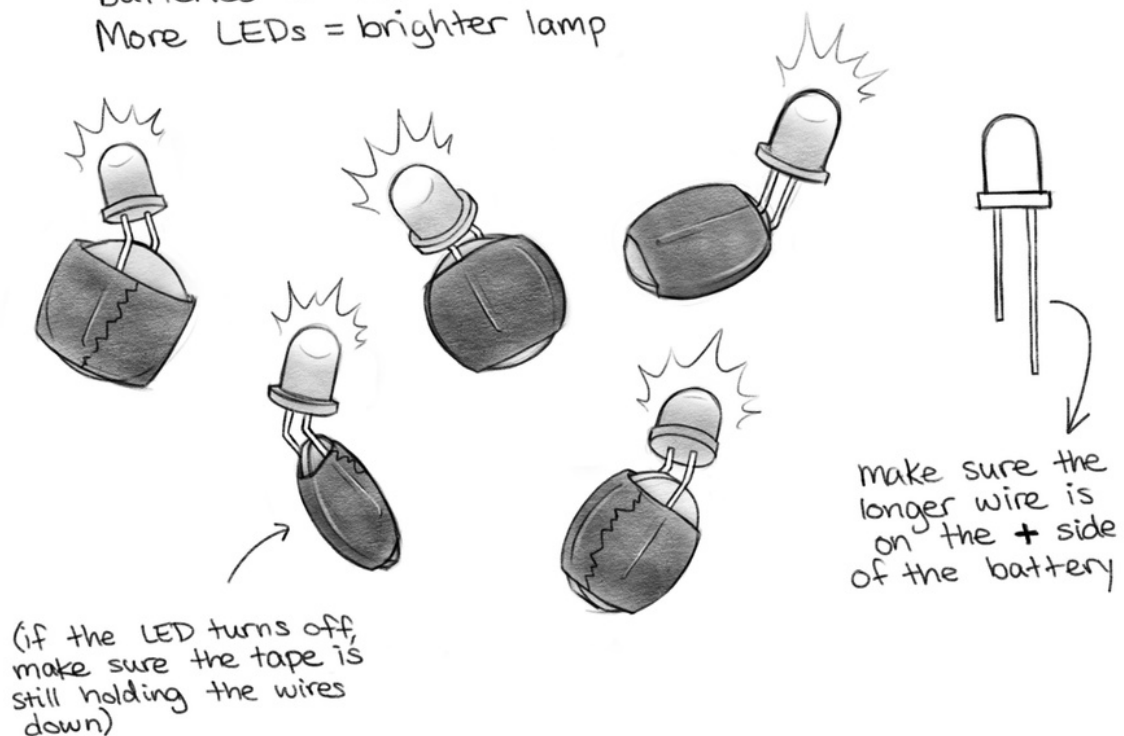




① Bend the LEDs at an angle



② Use the tape to attach the batteries to the LEDs.
More LEDs = brighter lamp

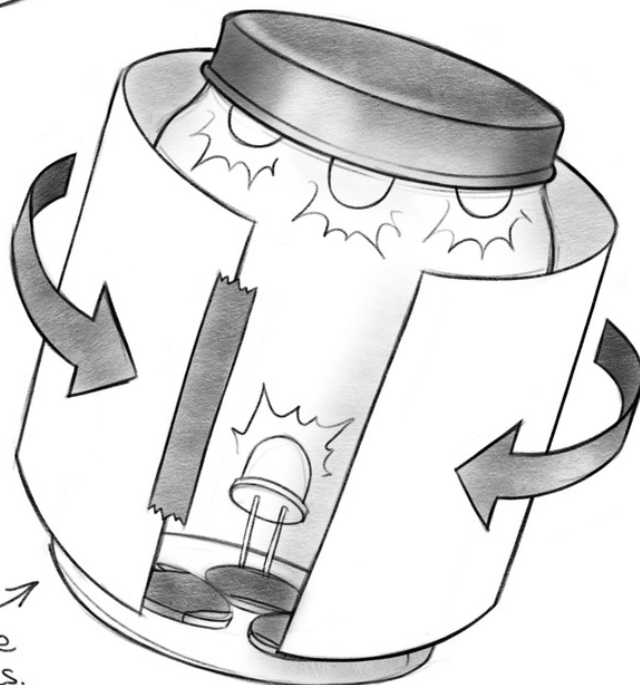




③ Use the tape to attach the LEDs to the inside of the jar. I put some on the lid and some on the bottom.

It's got lights now, but it doesn't really look like a lamp yet. That's because we still need something to spread the light more evenly.

④ Frosted glass or translucent plastic work best to spread the light, but if your jar is made of clear glass, you can wrap and tape a thin sheet of paper to the outside of the jar instead.



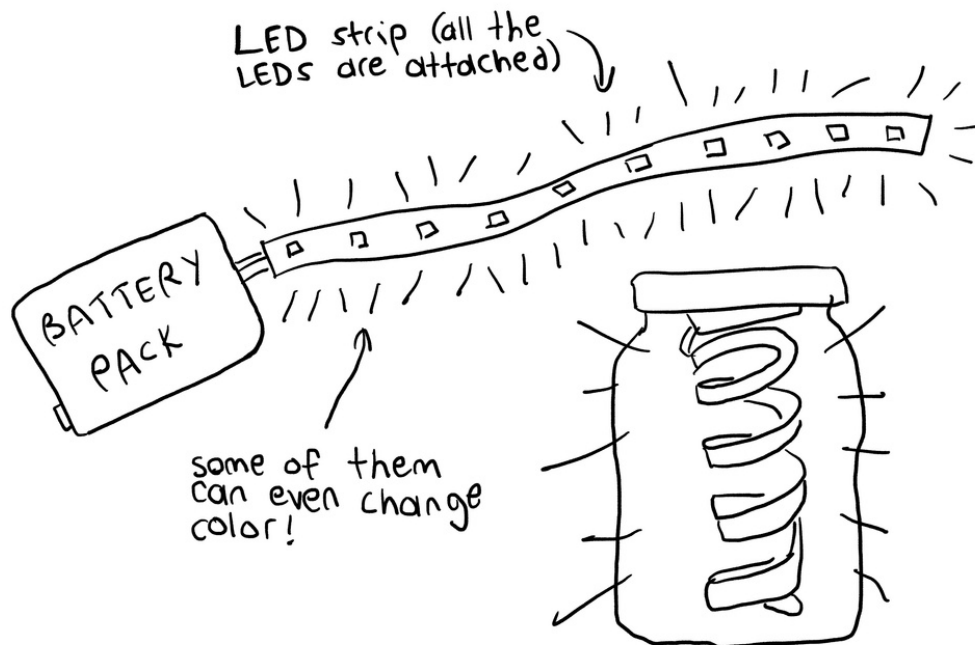
You can also use glue or clear tape to hide where the paper attaches.



- ⑤ Put the lid on and read a good book!



- ⑥ You can save batteries and make an even BETTER lamp if you use an LED strip!
-Cam



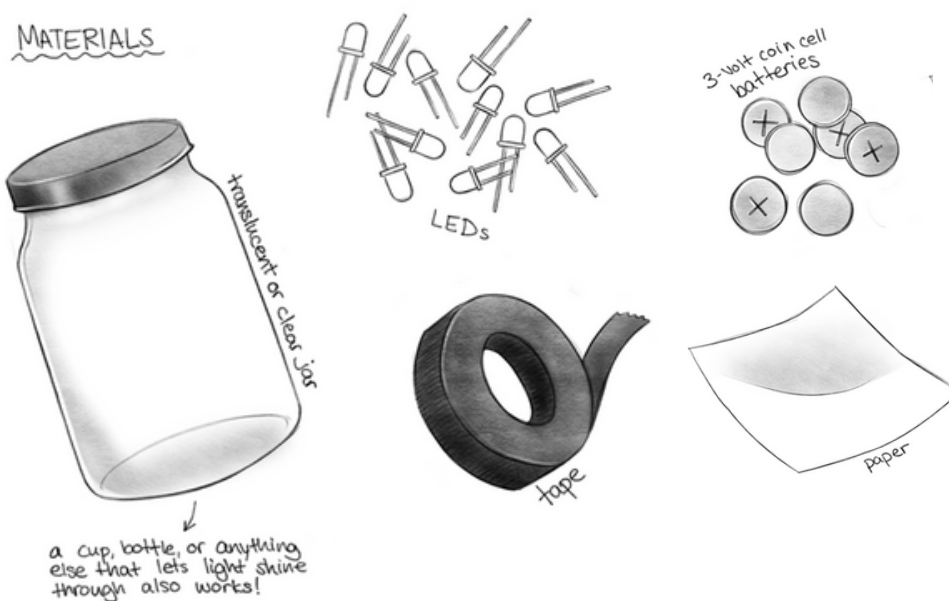
HEX ALLEN

SHOPPING LIST

Most of these components should be available at a hardware store. However, specialized electronics like the LEDs might be trickier to find, so links are included for ordering online.

PROJECT: HOW TO TRICK AN OGRE (LED LAMP)

- Glass or plastic jar (a frosted or translucent material works best but is not necessary)
- Tape
- Paper
- 5mm LEDs (you can use as many as you want to make the lamp brighter, but 5 LEDs should be sufficient; the LEDs can be purchased online at [Irish Electronics](#) or [Farnell](#))
- 3-Volt Coin Cell Batteries (you'll need one for each LED; the batteries can be purchased at many shops, but they are also available online at [Irish Electronics](#) or [Farnell](#))



ABOUT THE BOOK

Want to learn more about Hex and her adventures? Hex Allen and the Clanksmiths comes out in 2022. You can pre-order it at your local bookstore or online, or request it from your library.

Online:

[The Book Depository](#)

The Innovation Press, ISBN: 978-1943147779

AUTHOR & PROJECT ILLUSTRATOR

JASMINE FLORENTINE likes to make stuff. In the past, this has encompassed everything from designing games for robots, building a milk dehydrator, drawing cartoons, and most recently, writing a book. She has a BS and an MS from MIT in Mechanical Engineering, and is passionate about showing everyone how amazing STEM is. Hex Allen and The Clanksmiths is her first book.

COVER AND INTERIOR ILLUSTRATOR

EBONY GLENN is a children's book illustrator who enjoys bringing stories to life with whimsical and expressive imagery, a passion for the arts, great storytelling, and advocating for more diverse narratives in children's books, she aims to create art that will foster a love of reading in young readers.

