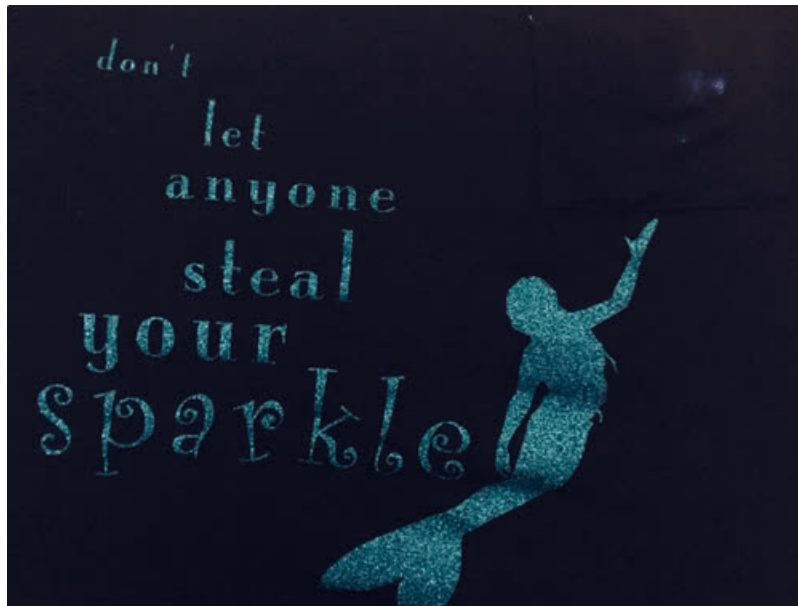




Easy Sparkle Pocket T-Shirt

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Overview

Make a sparkly t-shirt that sparkles with real lights. The lights are triggered by the Circuit Playground's shake sensor, so they twinkle when you move, dance, jump, or wiggle.

This is a very easy beginner project that's great to do with kids. It uses a vinyl cutter for the customizable iron-on decoration, and a Circuit Playground programmed with MakeCode, Microsoft's drag-and-drop code editor. The electronics slip into the t-shirt pocket -- there is no soldering or sewing required.

Best of all, the Circuit Playground is removable, so you can easily use it for other projects too.



Parts

1x [Circuit Playground Express](#)

Adafruit Circuit Playground Express

[ADD TO CART](#)

1x [USB cable](#)

USB A to Micro-B - 3 foot long

[ADD TO CART](#)

1x [Battery](#)

500mAh LiPoly Battery

[ADD TO CART](#)

1x [Battery Charger](#)

USB Battery Charger

[ADD TO CART](#)

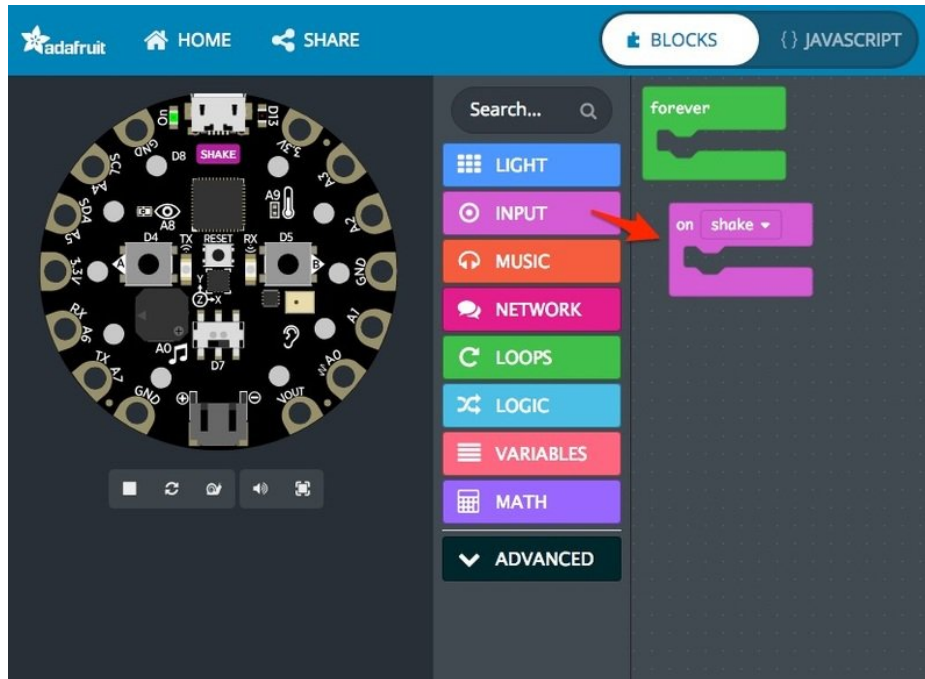
Materials Needed

- T-shirt with a breast pocket
- Circuit Playground Express
- LiPoly battery
- Vinyl Cutting machine
- Sparkly iron-on vinyl
- Iron & ironing board
- Sticky-back velcro square
- Rubber Band

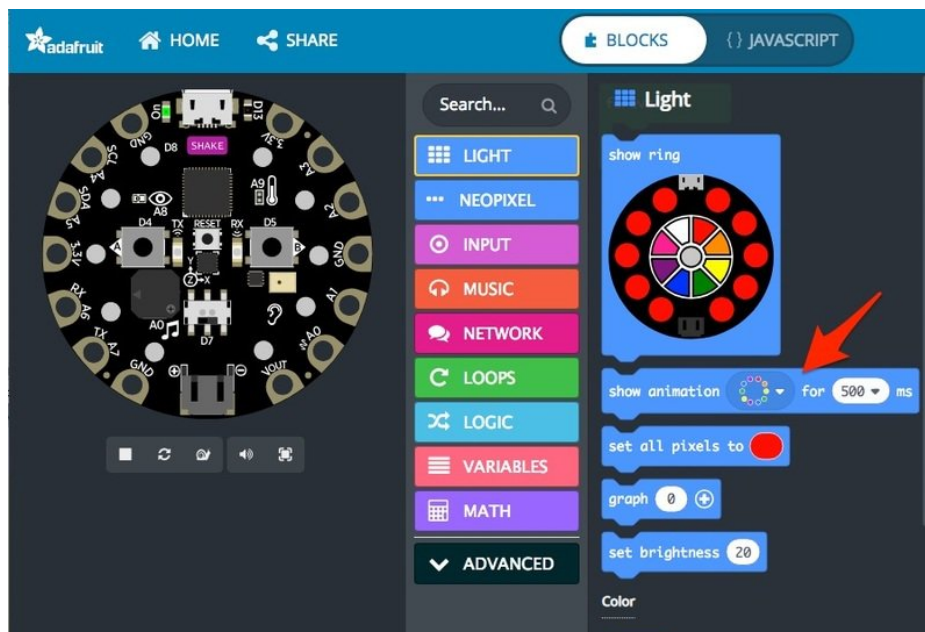


Code with MakeCode

Head over to makecode.adafruit.com (<https://adafru.it/wmd>) to start coding! Choose the Circuit Playground Express option and create a new project.



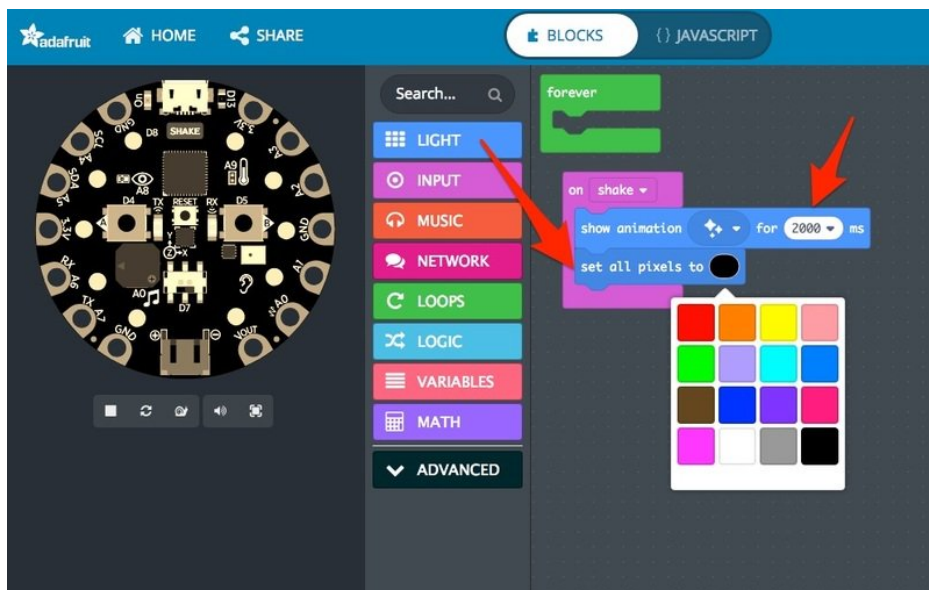
We want the lights to come on when we move or shake, so we'll use the **on shake** input. You can find this under the **INPUT** menu. Drag it into your code workspace.



Next, we'll tell it what to do when we shake. Under the **LIGHT** menu, choose the **show animation** block and drag that onto the workspace. Put it inside the **on shake** block.



We want the sparkle animation for this project, so choose that one. Then set the length you'd like the sparkles to last. I chose 2 seconds.



Finally, let's tell the Circuit Playground to be sure all the lights go off at the end of our specified animation time. Under **LIGHT**, drag out **set all pixels to** and then choose **black**, for off. Put this in the **on shake** block after the animation.

<https://adafru.it/CMv>

<https://adafru.it/CMv>

You can play with the simulator on the left to see what happens! Once you're happy with the code, click **Download**. Plug your Circuit Playground into your computer using a USB cable, tap the reset button on the Circuit Playground, and then drag the resulting file onto the **CPLAYBOOT** flash drive that appears in your file explorer/finder.

Shake your Circuit Playground and watch the sparkle!

If you're having trouble, head over to the [Circuit Playground Express guide here \(https://adafru.it/AIX\)](https://adafru.it/AIX) for some

troubleshooting tips.

Vinyl Cutting

I used a Cricut Explore Air 2 for this project, but any vinyl cutter should work just fine. I've added a link to the project on the Cricut Design Space so you can customize the design or the message to match your style.

<https://adafru.it/CMw>

<https://adafru.it/CMw>

Or, you can download this image file for use with other vinyl cutters or vinyl cutting services.



Sizing and Layout

Different sized t-shirts will want different sized designs. Luckily, it's easy to customize the size in the Cricut Design Space. Just select the group and drag the corner until it's the size you want.

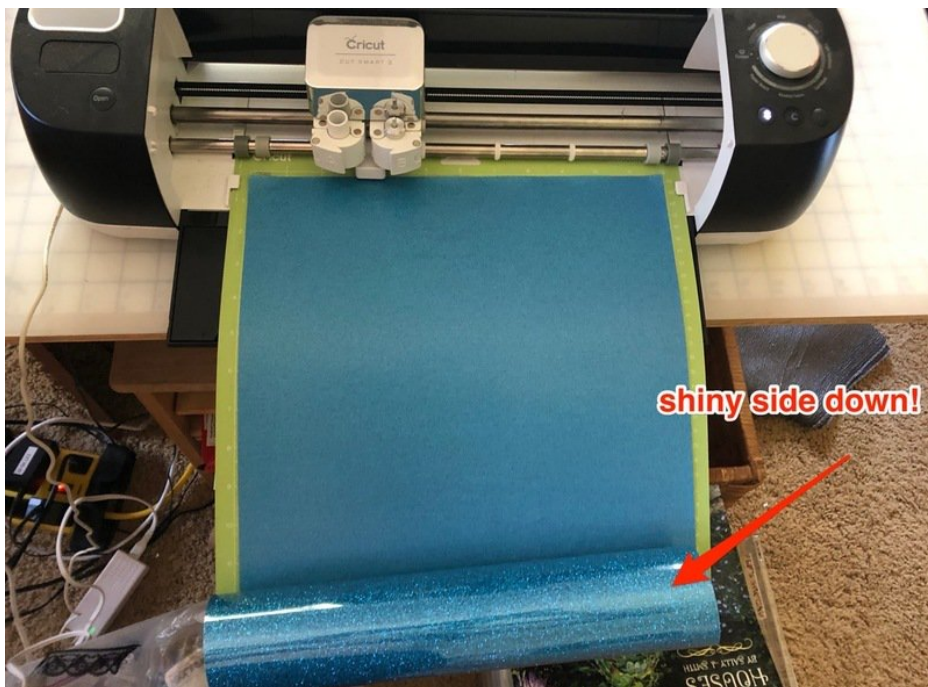
Next, select all the layers except the circle "moon", and click "Weld". This will ensure the whole design cuts as it's laid out on the design board.

Do a test cut on a sheet of paper or card stock and hold it up in front of your shirt to be sure you like the sizing and placement.



After you're sure you're happy with the layout, load your iron-on vinyl into your vinyl cutter **liner side down**. This means shiny-side down, or upside-down, most of the time. Double check to be sure you have this right! This stuff is expensive.

Set your vinyl cutter to the "Iron On" setting and cut.





Peel the unused vinyl carefully off the liner. It works best to pull horizontally, close to your work table (instead of upwards toward the ceiling).

Take a utility knife or other small sharp tool and carefully "weed" the design, pulling out any vinyl that shouldn't be there and leaving just your perfect design on the liner.

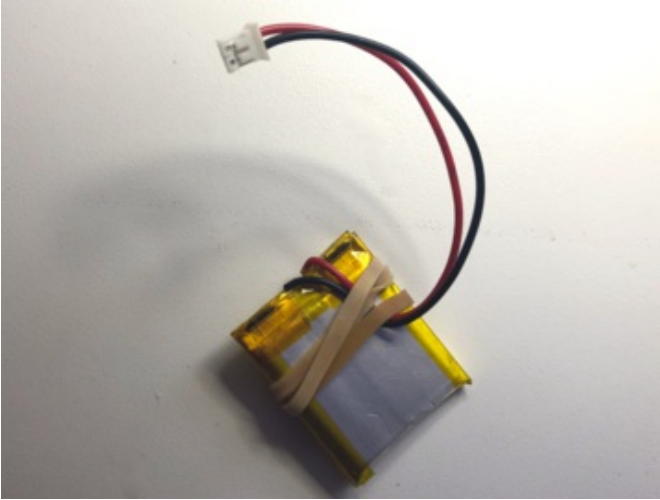




Line up the design on your t-shirt. Read the directions that came with the iron-on vinyl for best results. Preheat the fabric, then iron on both sides and let the design cool completely before removing the liner.



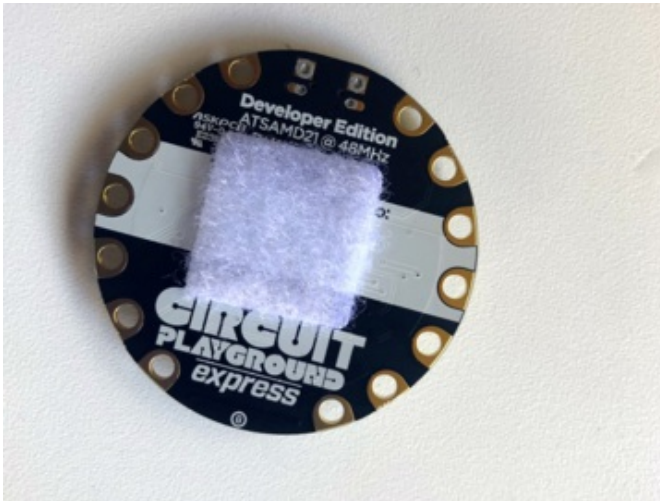
Assembly



Gently wrap a rubber band around your battery, catching the leads. These batteries break really easily at the joint where the wires connect to the battery. This little step will add strain relief and save you a lot of heartache.

Slip the Circuit Playground Express and the battery into your t-shirt's pocket and shake it around. Watch it sparkle! On a light-colored t-shirt, or for a subtle light effect, you're done!

If you used a dark colored t-shirt like mine, you may find the lights aren't quite dramatic enough. Here's how I added the Circuit Playground Express to the outside of the pocket for a little extra oomph.



Stick a piece of sticky-back velcro on the back of the Circuit Playground Express. Place the other side on the outside of the shirt pocket, so the Circuit Playground's top aligns with the top of the pocket. Slip the battery in the pocket and attach the Circuit Playground Express to the velcro.



Cut a circle "moon" out of holographic sticky-back vinyl. (This is the other layer in my Cricut project) It should be slightly larger than 2" across so it covers the whole Circuit Playground.

Stick the vinyl to the front of the Circuit Playground Express to diffuse the light and create a sparkly moon.



Slip the battery in the pocket and stick the Circuit Playground Express to the outside of the pocket. Flick the moon and watch it sparkle!