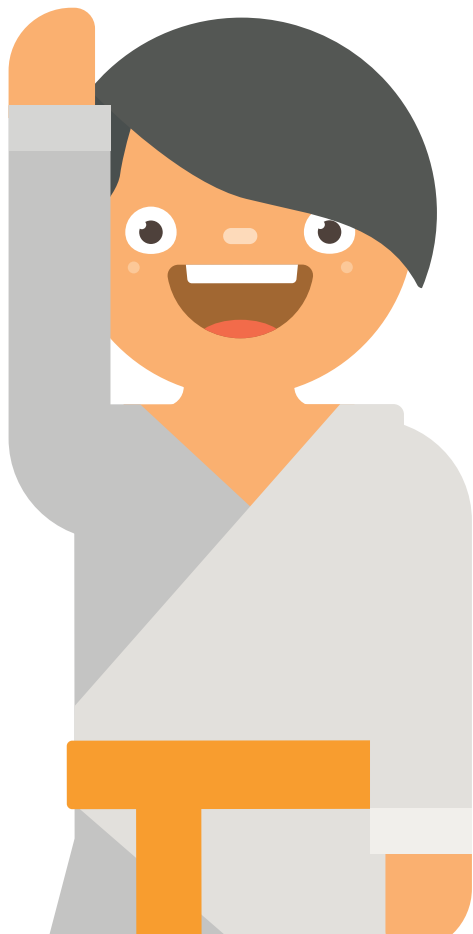


How to make a lightboard



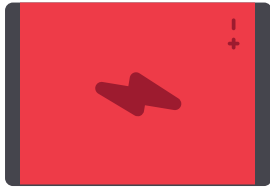


Hi! I'm Judoka, your pixel pal,
and I'm going to help you
build and code your own
lightboard. **Ready? Let's go!**

Pixel Board



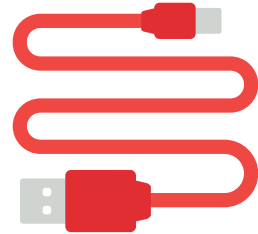
Battery



Mode Dial



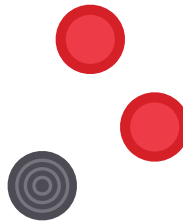
Power Cable



Lanyard



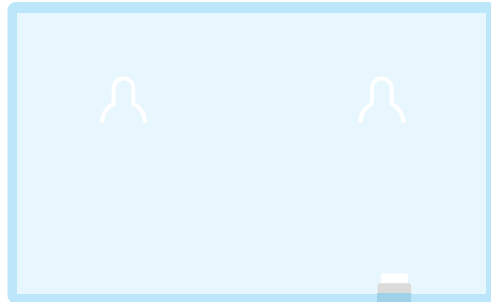
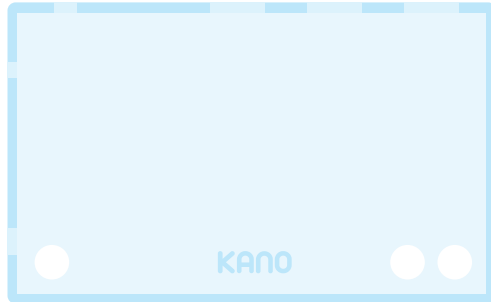
Joystick and Buttons



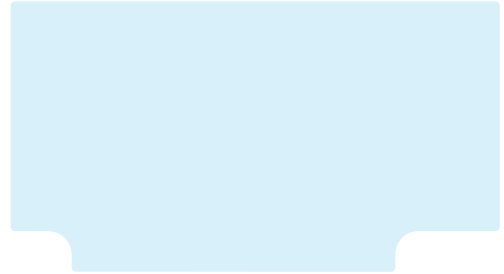
Stickers



Case



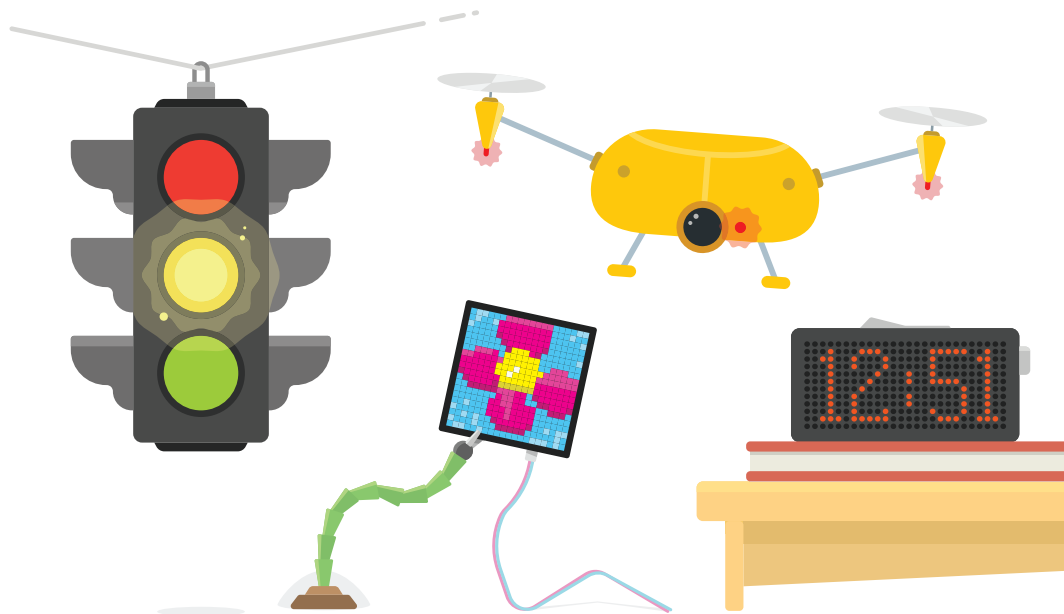
Filter



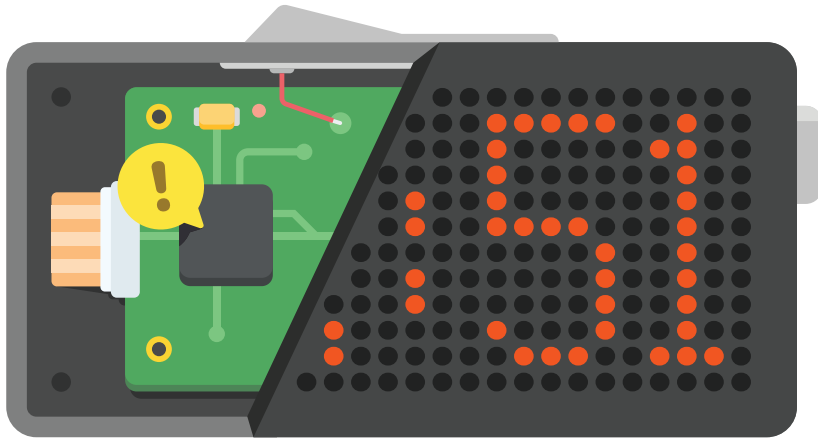
Kano App

Download the app to talk
to your Pixel Kit. Visit:
www.kano.me/app

Pixels and lights are everywhere

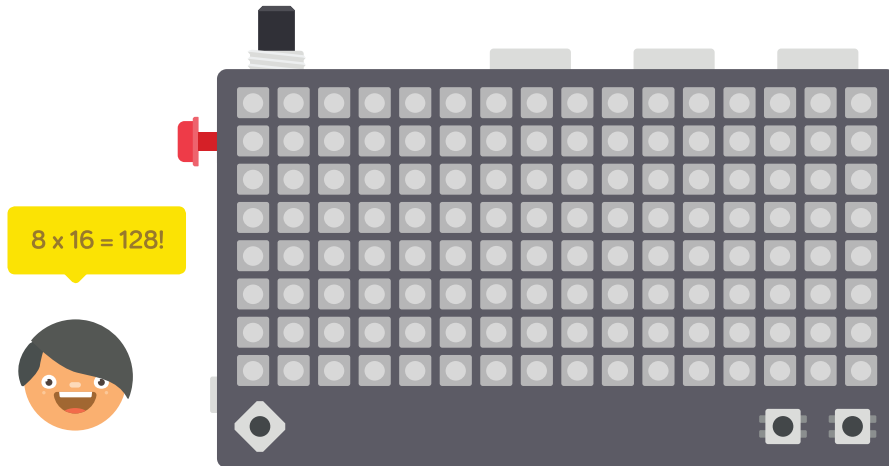


Inside them are tiny computers...



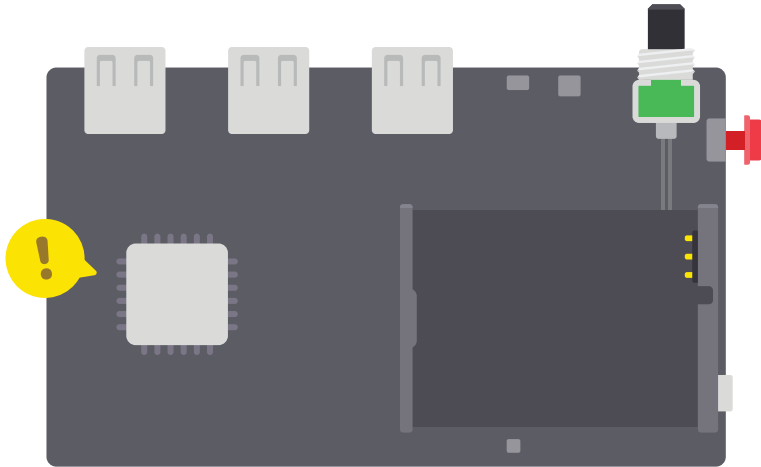
...telling the lights to blink on and off

Pick up the board



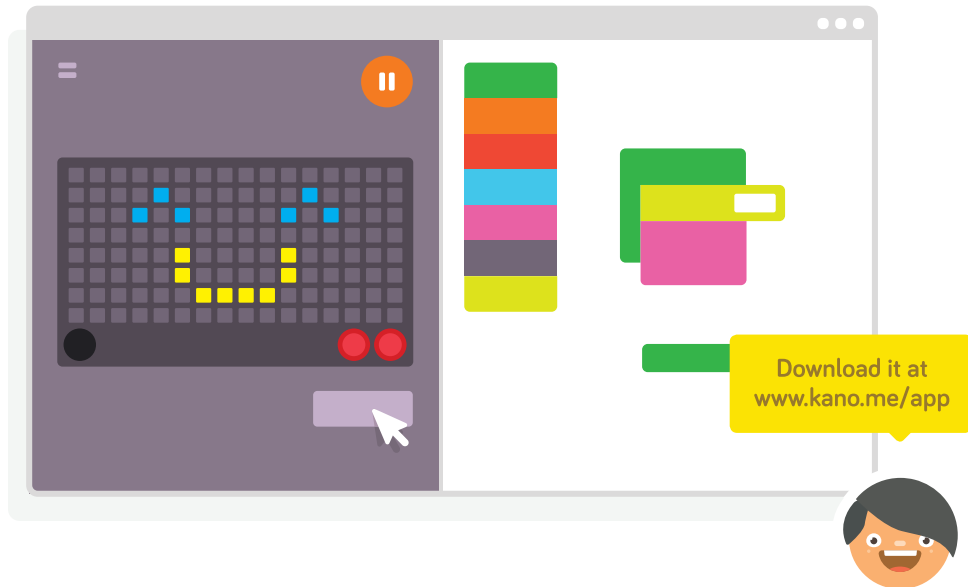
It has 128 lights

Turn it over

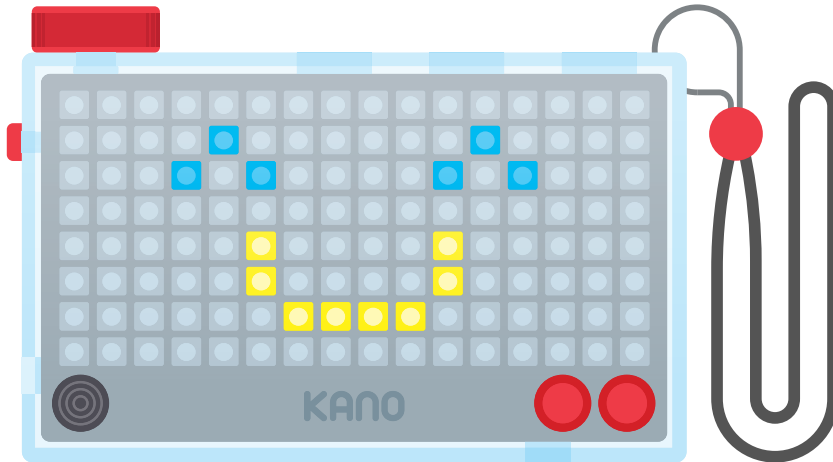


This is its brain

You can talk to the lightboard's brain using **Kano App**...

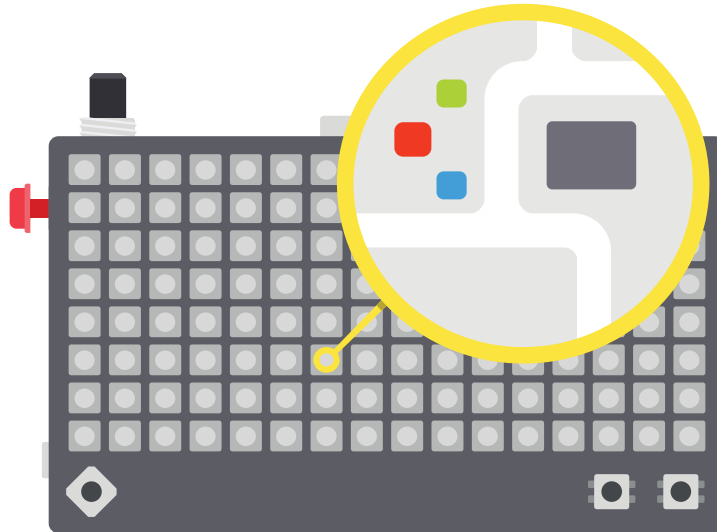


...and take control of the lights



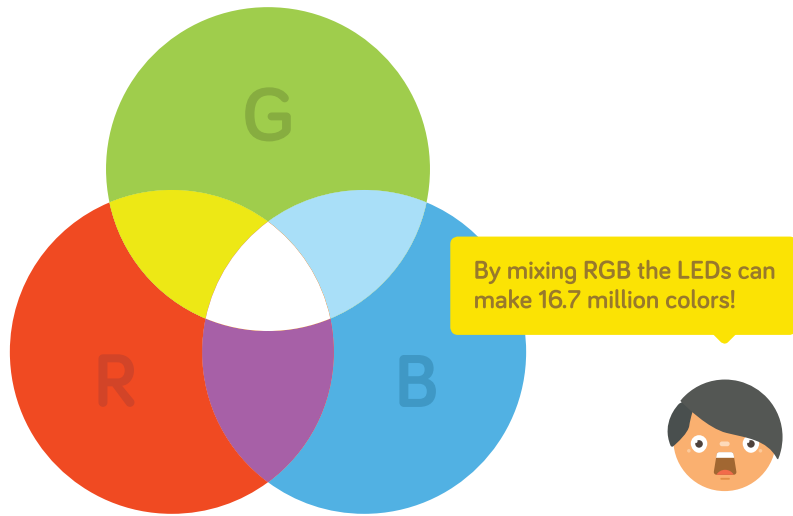
They're called **L**ight **E**mitting **D**iodes - LEDs

Take a closer look. What can you see?



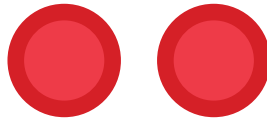
Hidden within each LED are 3 tiny lights – a **R**ed, a **G**reen and a **B**lue

They work together to make colors



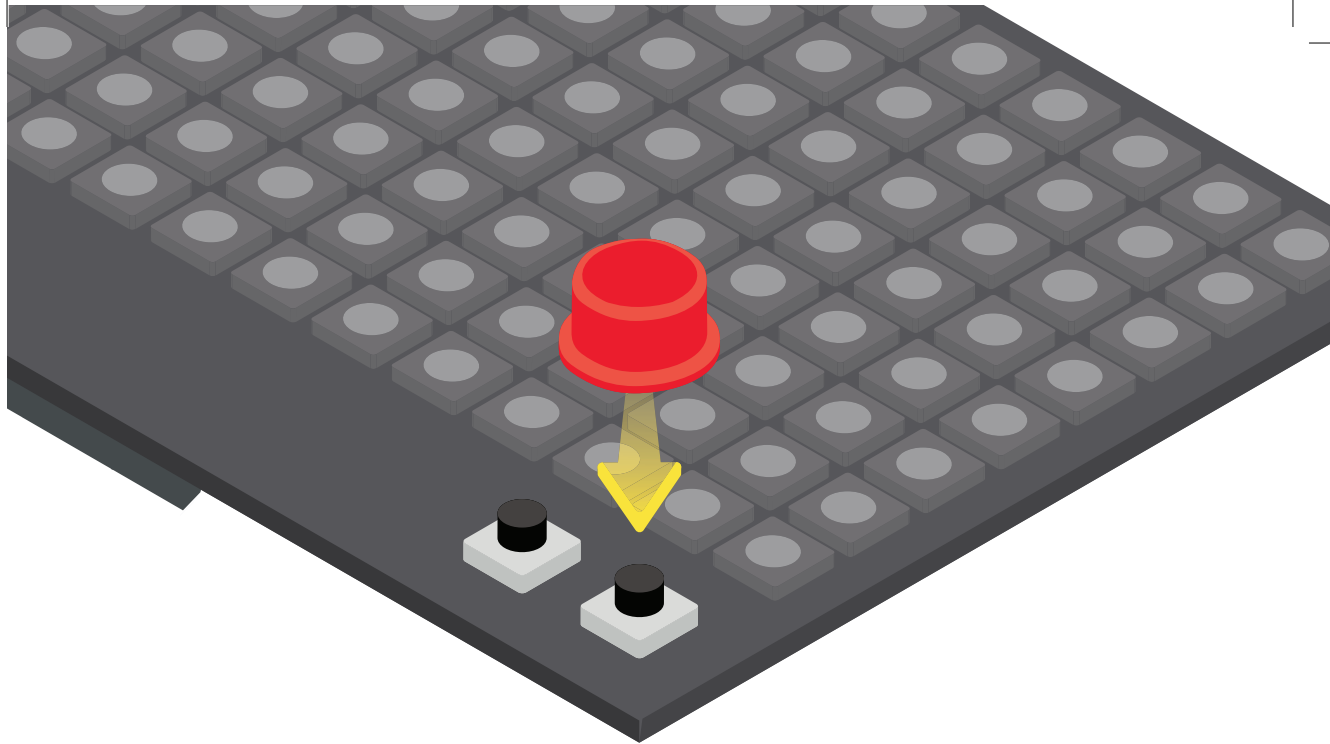
Soon you'll code the LEDs to create patterns, animations, games...

But first, you need buttons



The buttons send
electrical signals to the
brain when pressed





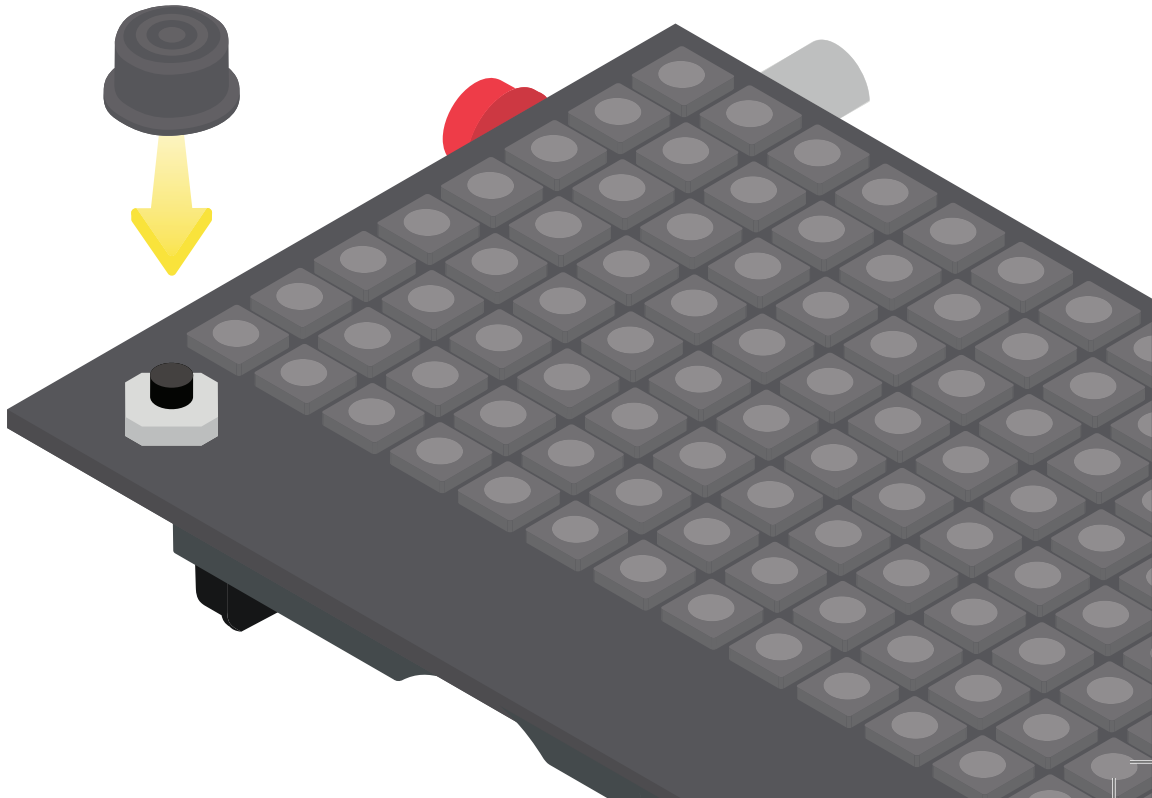
Push both red buttons firmly in place, like this

Great! Now let's add the joystick

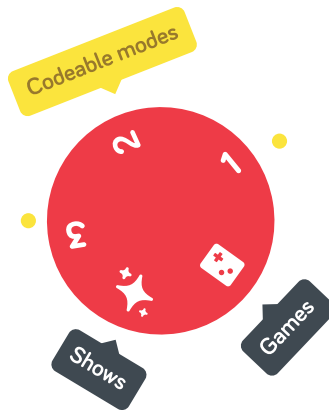


It moves up, down, left, right and clicks

Plug it firmly onto the brain

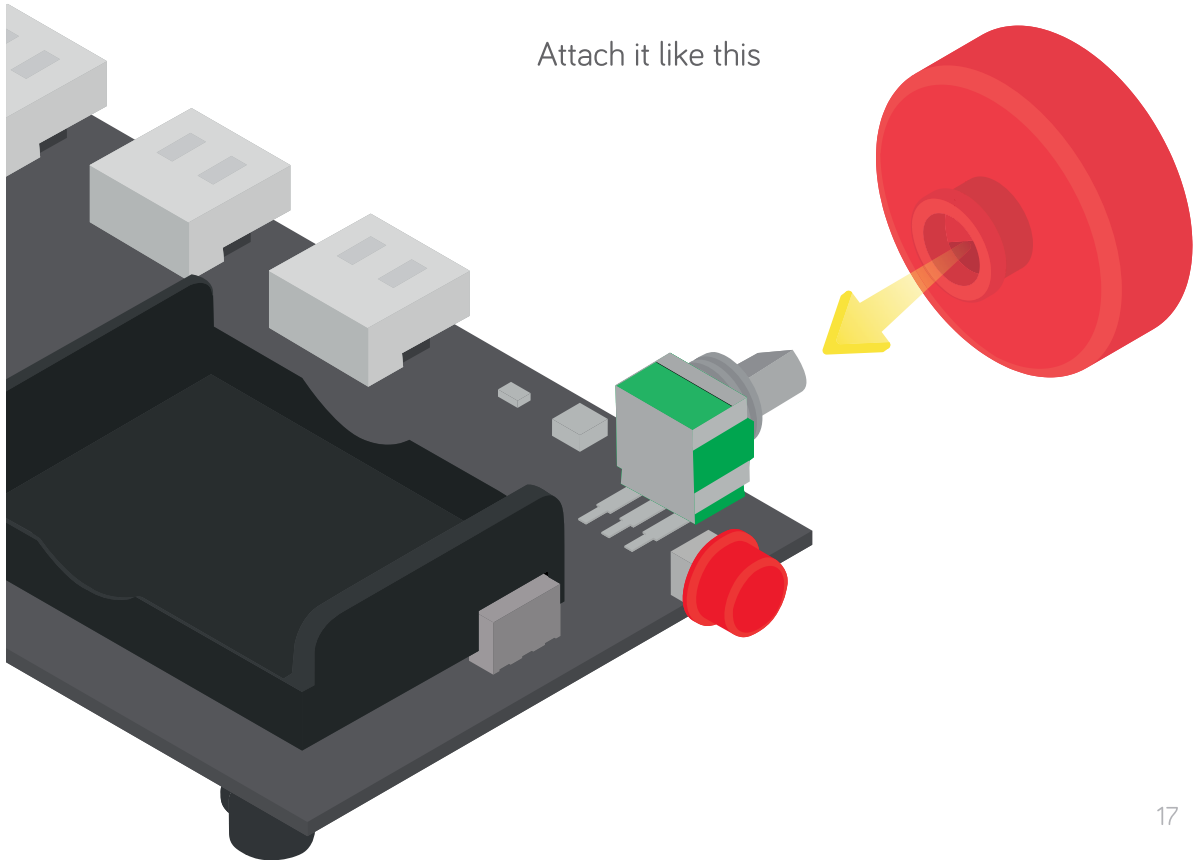


Time for the mode dial



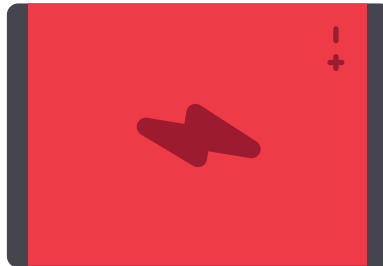
Each turn sends a signal to the brain, telling it what mode you want

Attach it like this



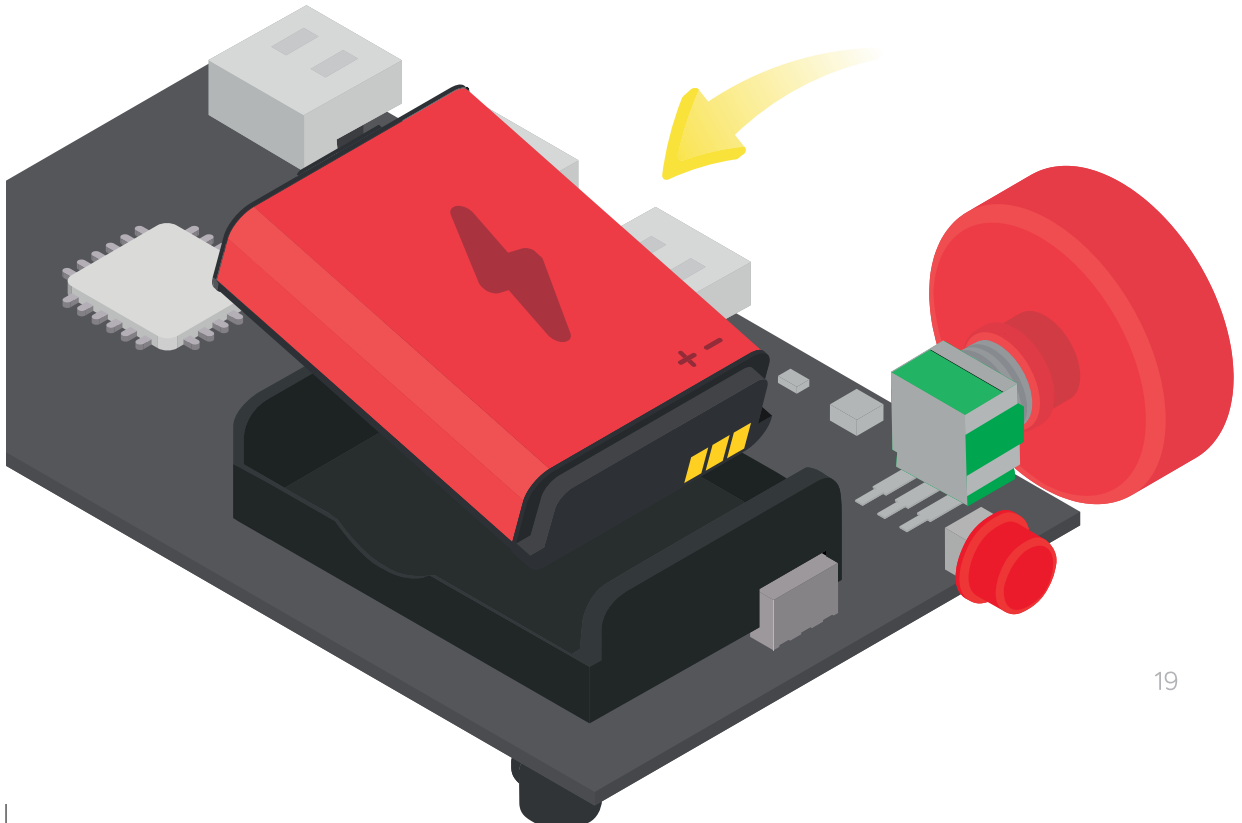
You need the battery to power up the pixels

Inside there are trillions
of moving electrons,
which create electricity



Make sure it is this way up

Place the battery in, shiny connectors first

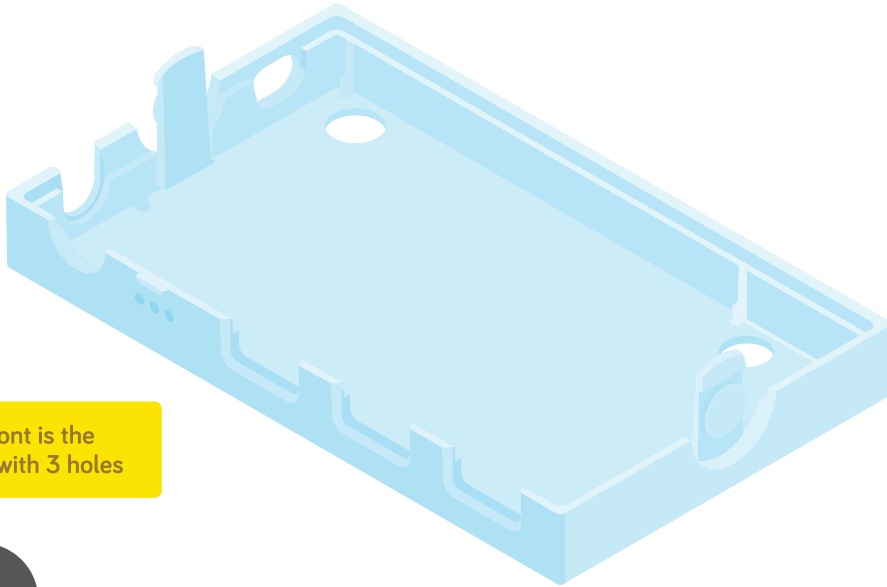


Great! Now, to keep it strong and safe...



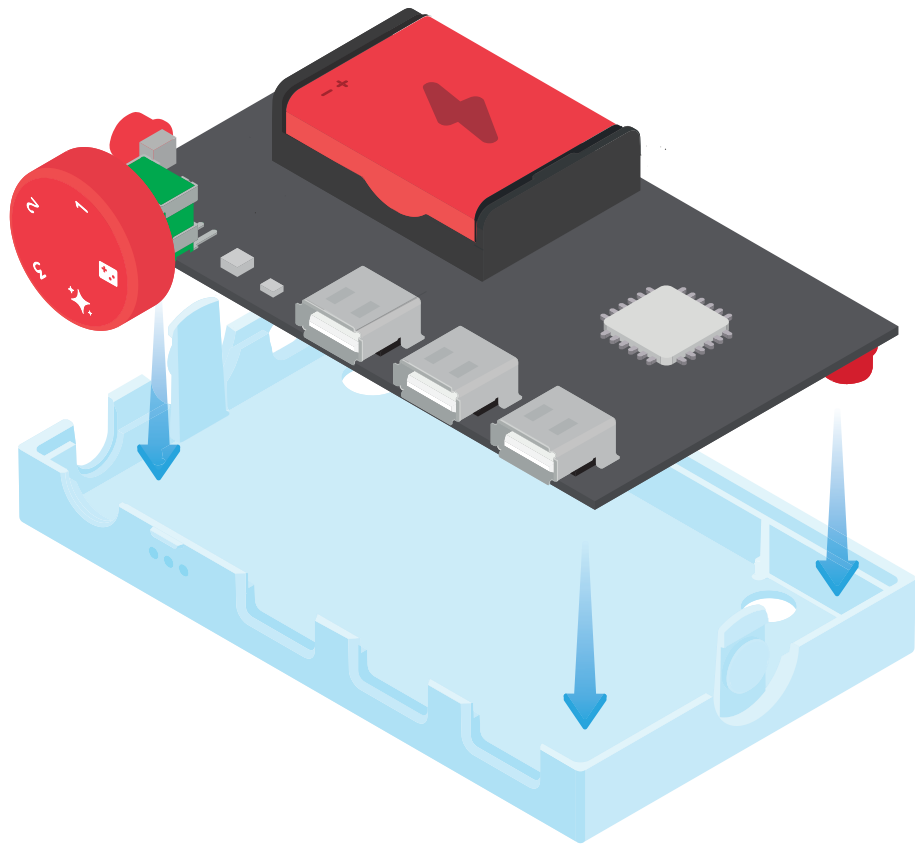
...let's make a case

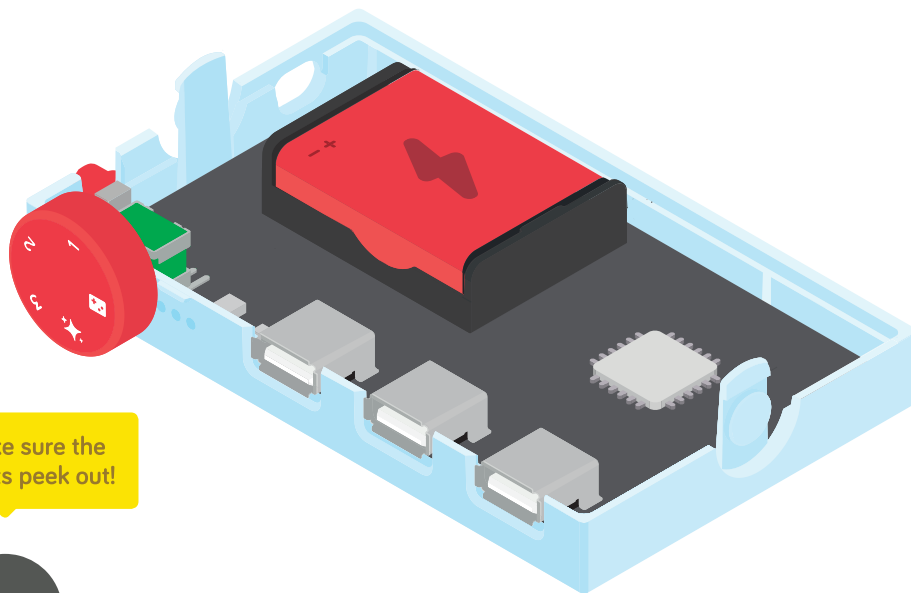
Put the front of the case on a flat surface



The front is the
piece with 3 holes

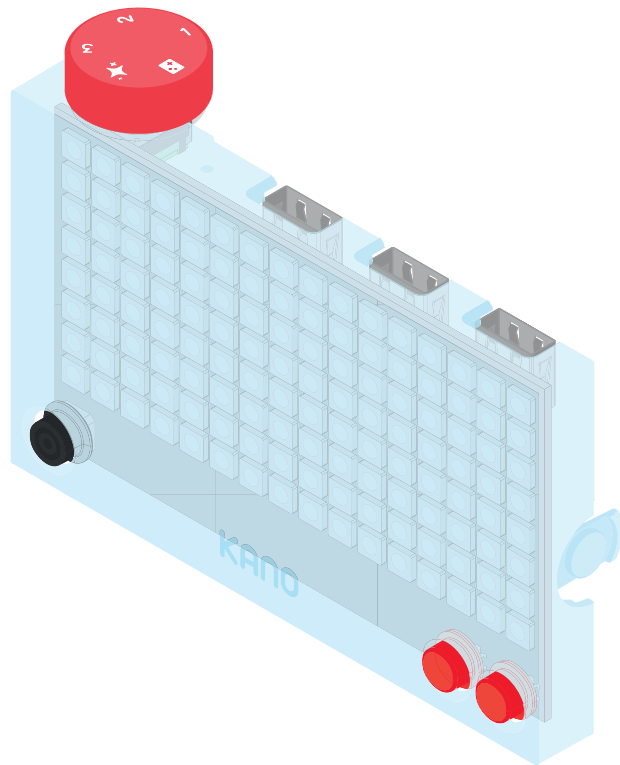


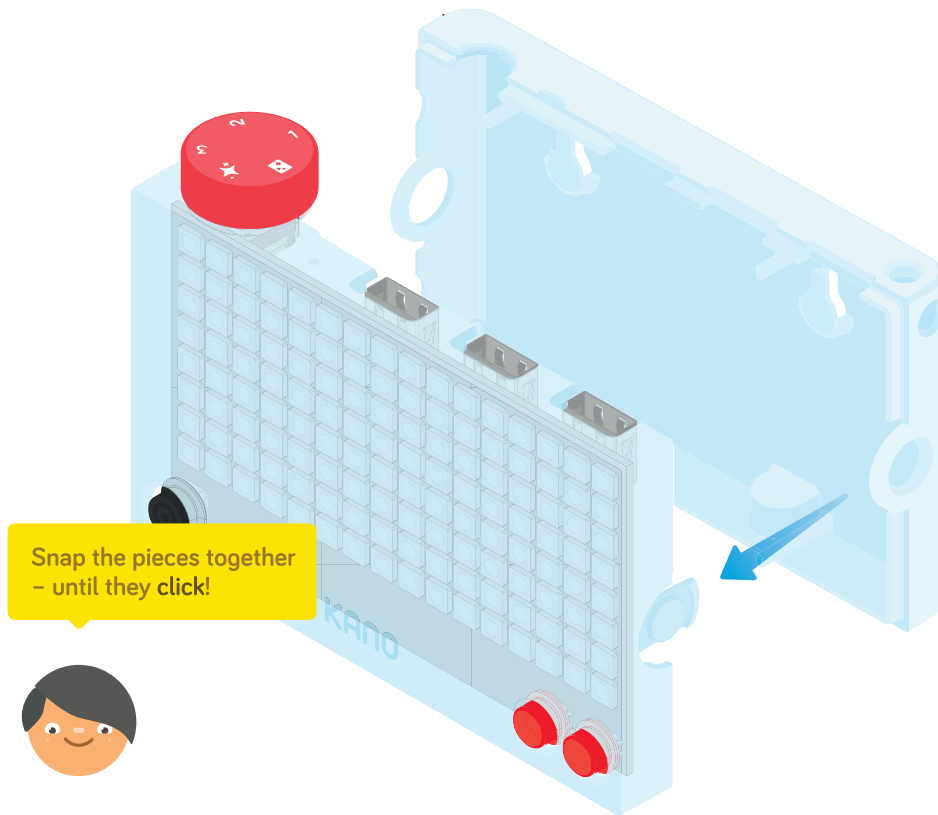




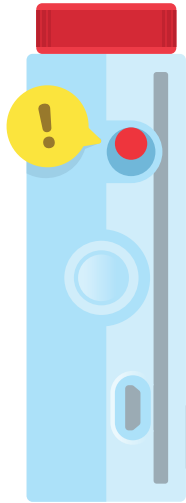
Make sure the
ports peek out!





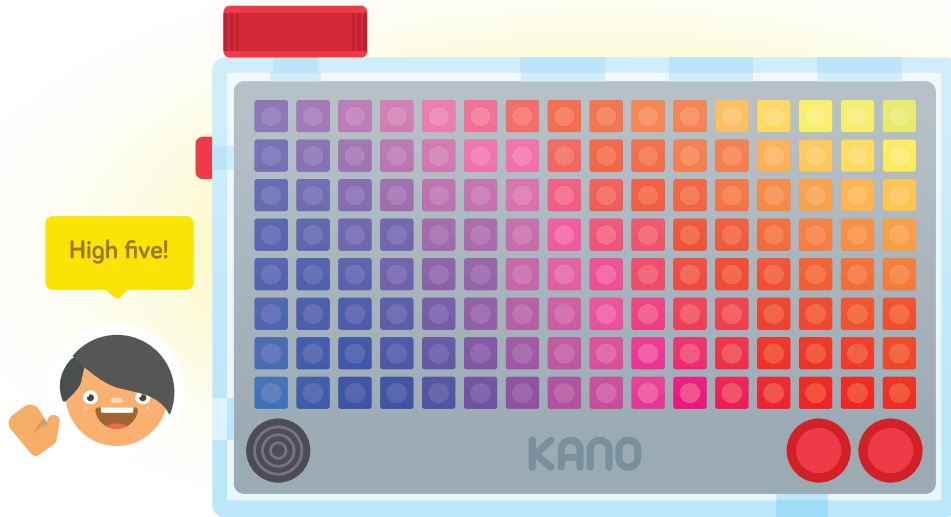


Let's bring it to life



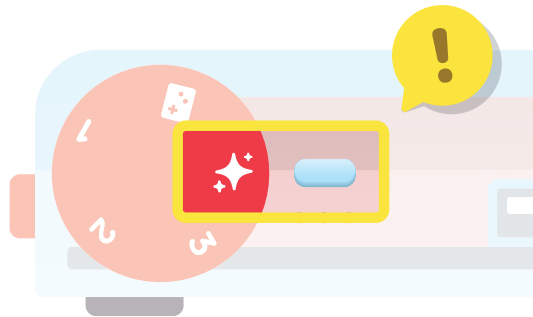
Slide the switch down to turn it on

Awesome!



No lights? Go back to page 20

Turn the dial to ✨

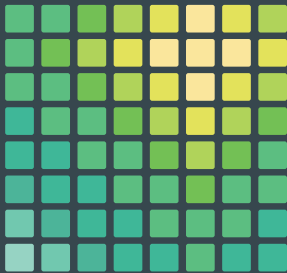


Make sure it
lines up like this

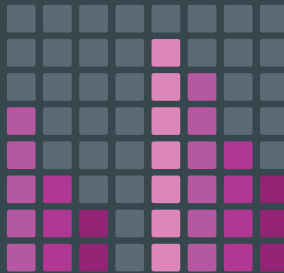


This is **Light Mode**

There are three lightshows



Perlin noise



Sound Visualizer



Particle Flow

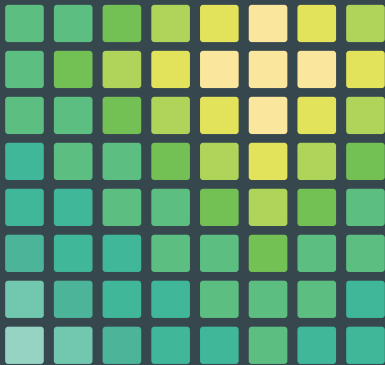
Move the **joystick** left and right () to choose between them

Select the one that looks like this



Press **A** ( ) to Start

This is **Perlin Noise**



Perlin Noise is an algorithm. It's used to create textures and landscapes in animations, movies, and games like Minecraft.



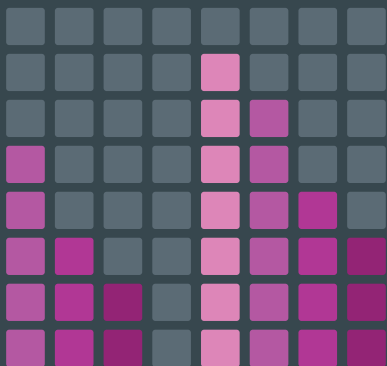
Use your **joystick** to adjust the noise pattern



The **A** button morphs the colors

Press **B** ( ) to go back to the Menu

Select the second lightshow, **Sound Visualizer**, and press **A** to start



Sound Visualizer uses your Pixel Kit's microphone to turn sound into light



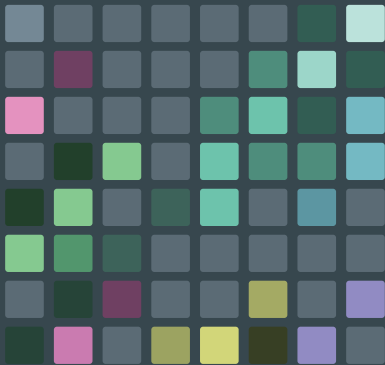
Now make some **noise**, and see how the device reacts



Change the colors with your **joystick**

Press **B** to go back to the Menu

The third lightshow is **Particle Flow**



These points of light drift across the lightboard leaving a trail of color like shooting stars

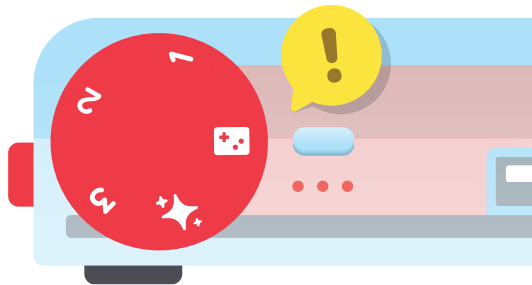


Use the **joystick**
to control the flow of
the particles

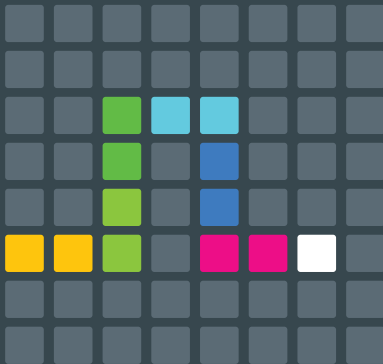


Up and Down
adjusts the speed

Now turn the dial to **Game Mode**, 



Let's start with a classic – **Super Snake**



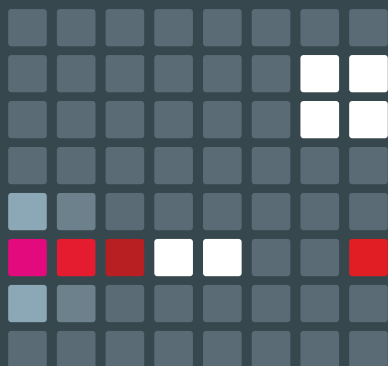
Snake was first released in 1978, but the same rules still apply today – eat the apples, don't hit your tail!



Move the snake around
with your **joystick**

Press **A** to start and **B** when you're finished

Rainbow Runner is a space adventure



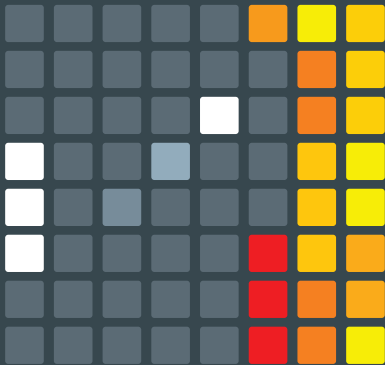
Switch lanes. Avoid white meteors. And grab the flashing fuel crystals! Swoosh!



Steer your ship
using the **joystick**

Press **B** to go back to the Menu

Test your accuracy in **Breakout!**

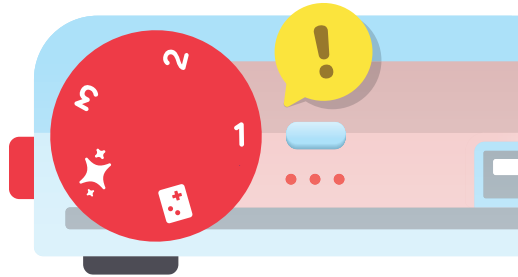


Bounce the ball, using the paddle. And smash your way through the wall!



Move your paddle with the **joystick**

Now it's time to code your own creations...



...with modes **1**, **2** and **3**

You'll make your own **games**, **animations** and **more**



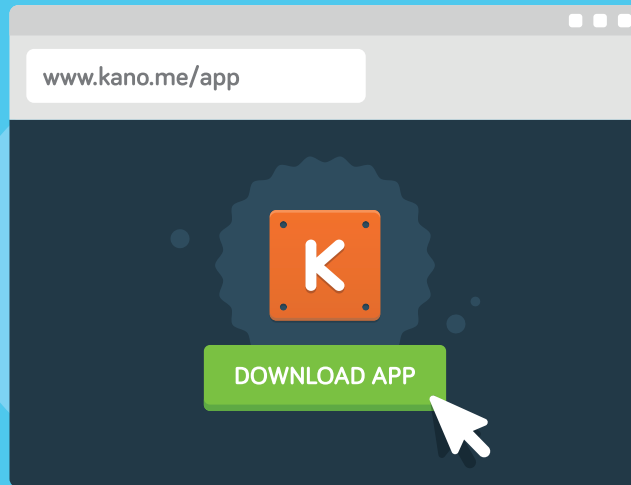
Let's fire up the **Kano App**

Go to www.kano.me/app on your home computer...



...and follow the instructions on screen

Once installed and connected...



...you'll activate the full power of your lightboard!

Beat the **coding challenges** to unlock...



Weather Watcher

Live weather data to help you decide if you need an umbrella

Musical Heartbeat

Create amazing light displays that move in time with the beat



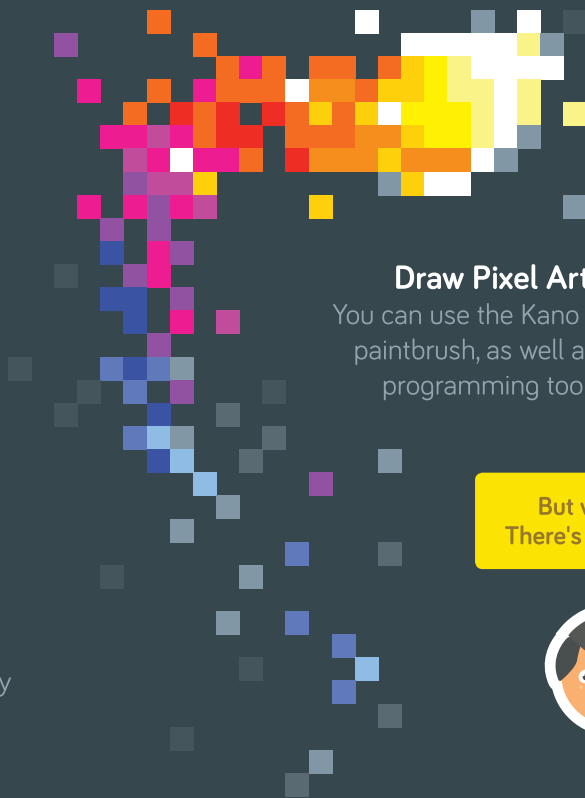
Chatterbox

A face that talks when you talk



News Ticker

Stream live news to your display
to stay on top of events



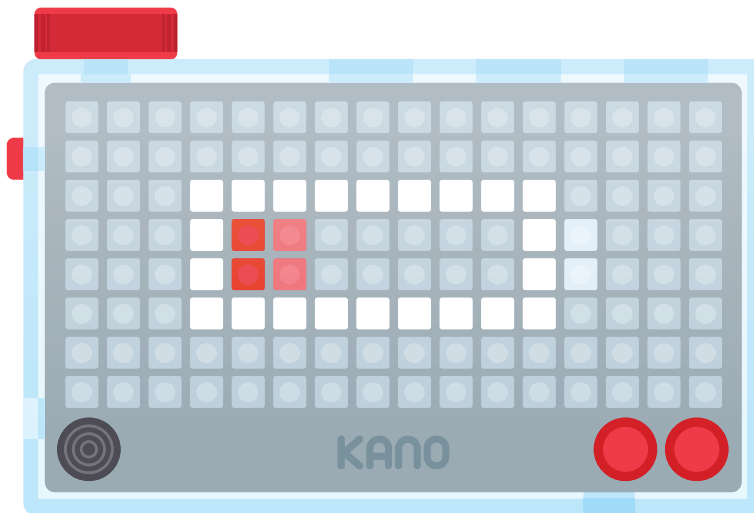
Draw Pixel Art

You can use the Kano App's
paintbrush, as well as its
programming tools

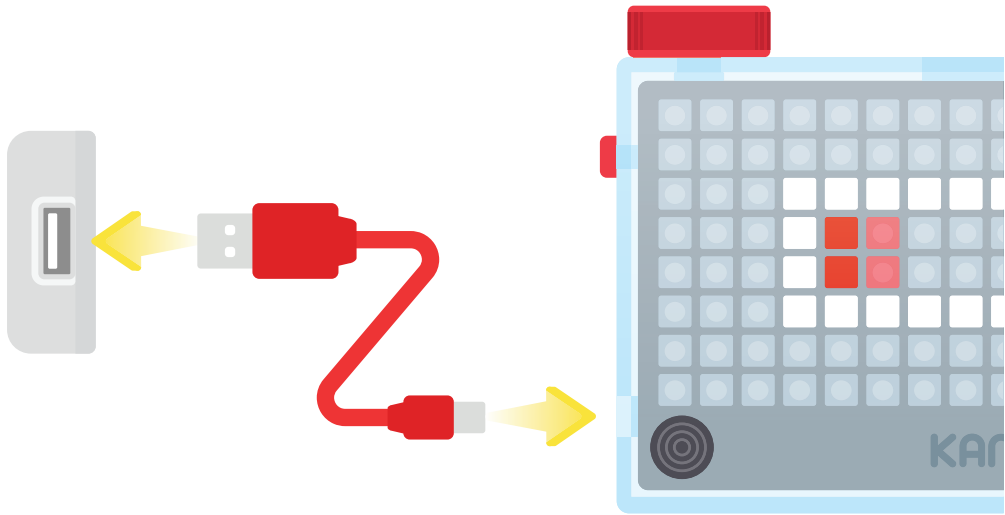
But wait!
There's more...



Your lightboard will need to be charged from time to time

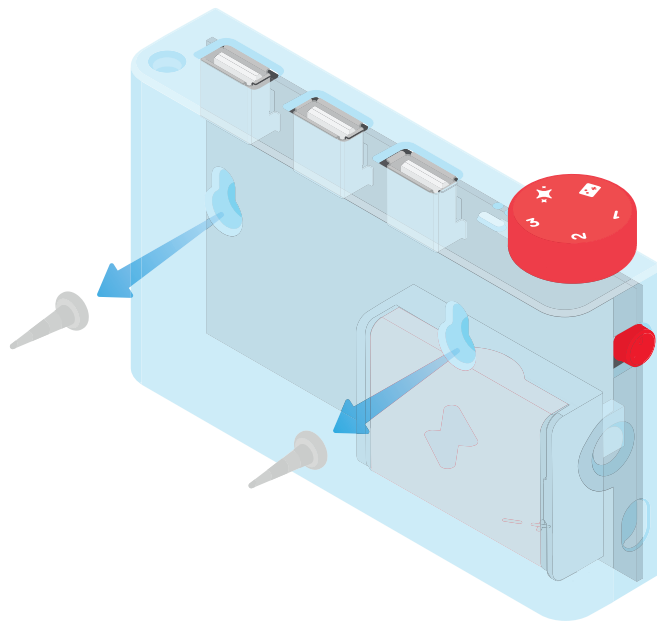


Plug the small end of the red cable into your lightboard...

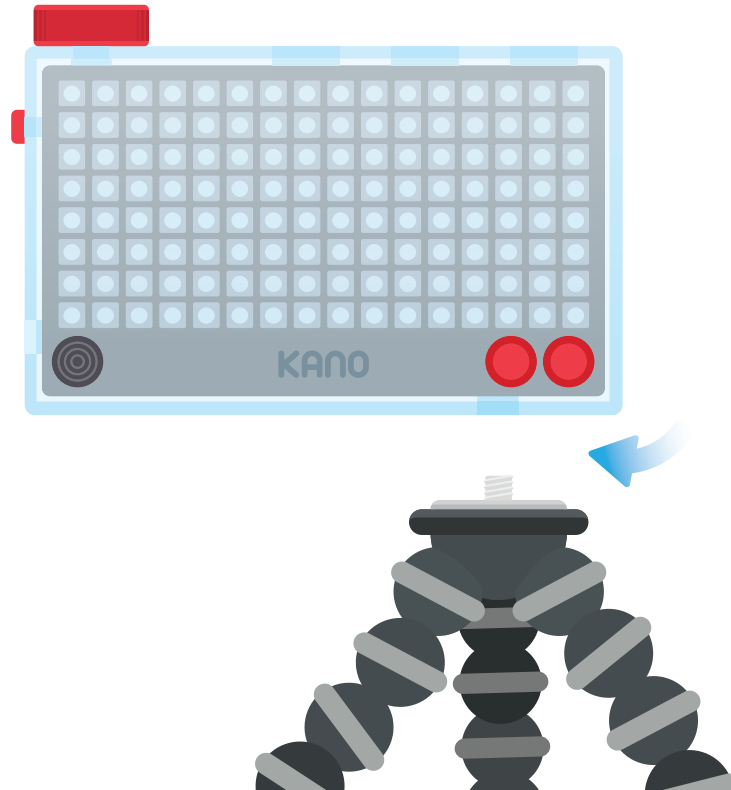


...and the big end into a USB charger or computer

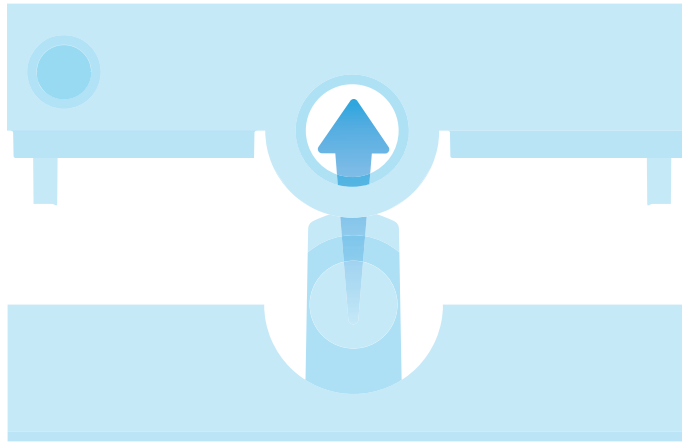
The holes on the back help you mount it to things



Even screw it onto tripods!

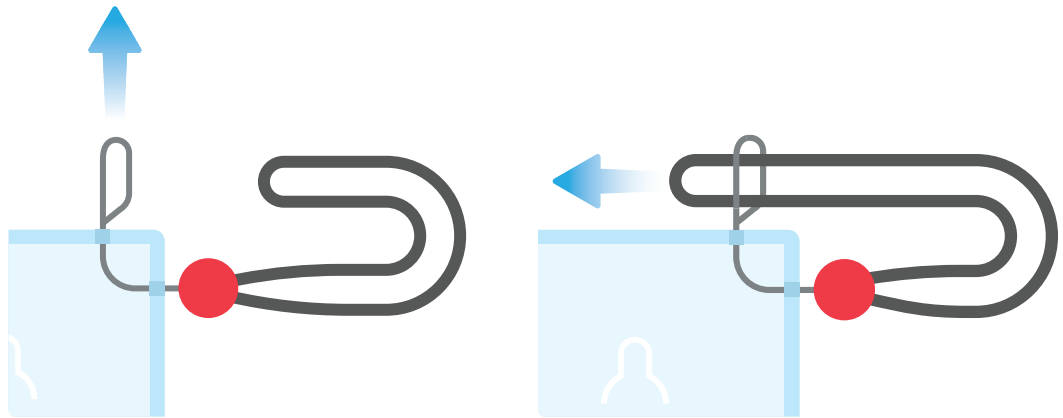


Let's make it easier to carry

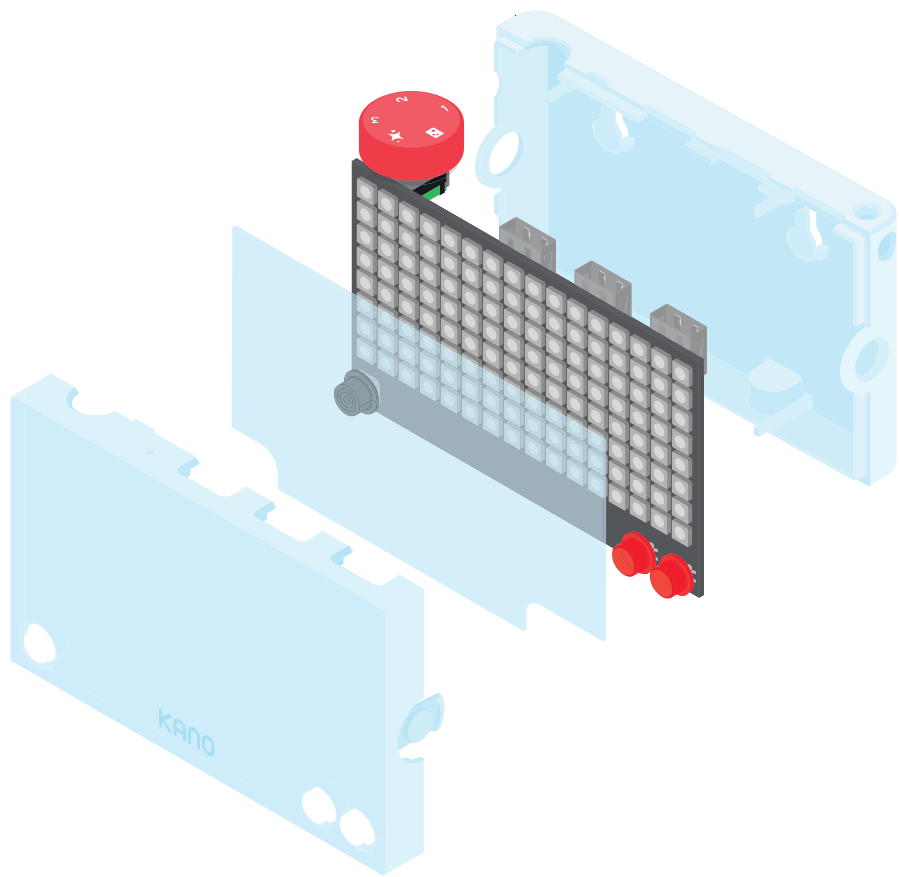


Take off the back

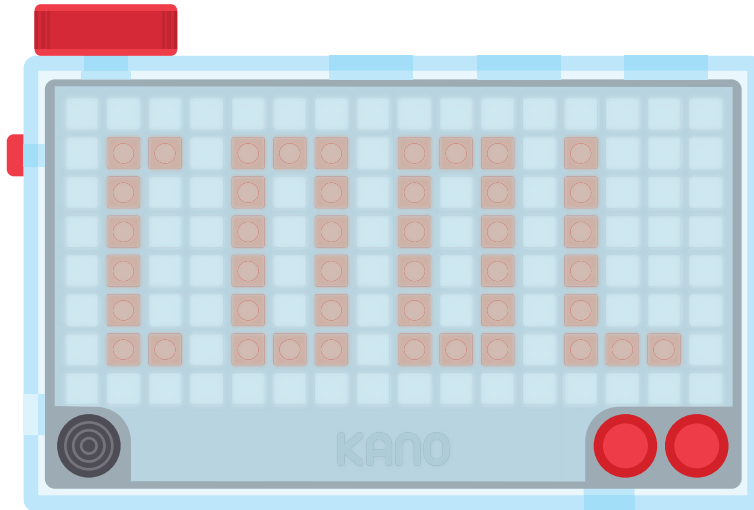
Push the small end of the lanyard through the side hole



Now pull tight

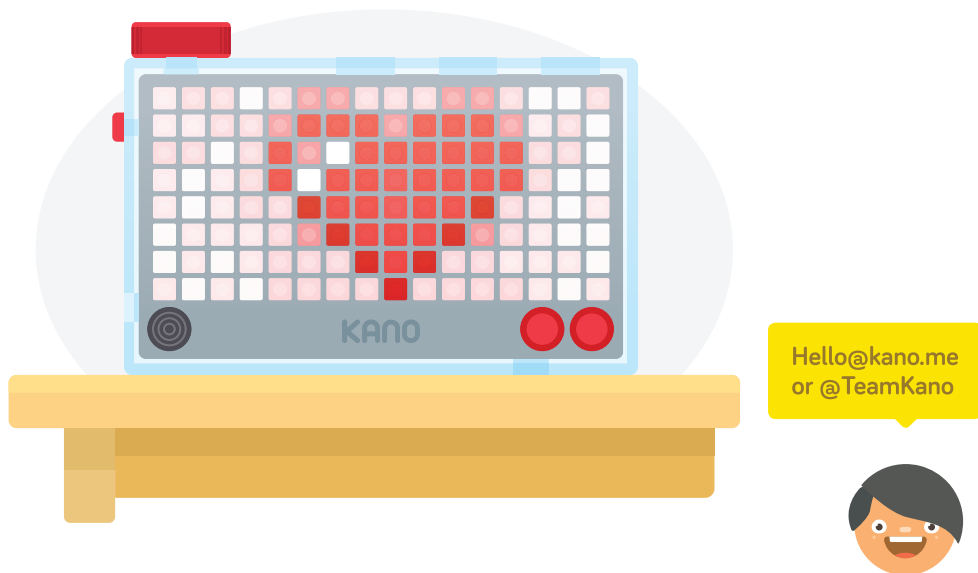


Add a filter



It'll change the effect of the light

Email or tweet us a picture of what you make with your Pixel Kit...



...and we'll make you famous!

Want more?



help.kano.me

Help with anything
from kits to coding



kano.me/world

Endless content by
a friendly community



kano.me/shop

More kits
and sensors



/teamkano

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and fun stuff



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and questions



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