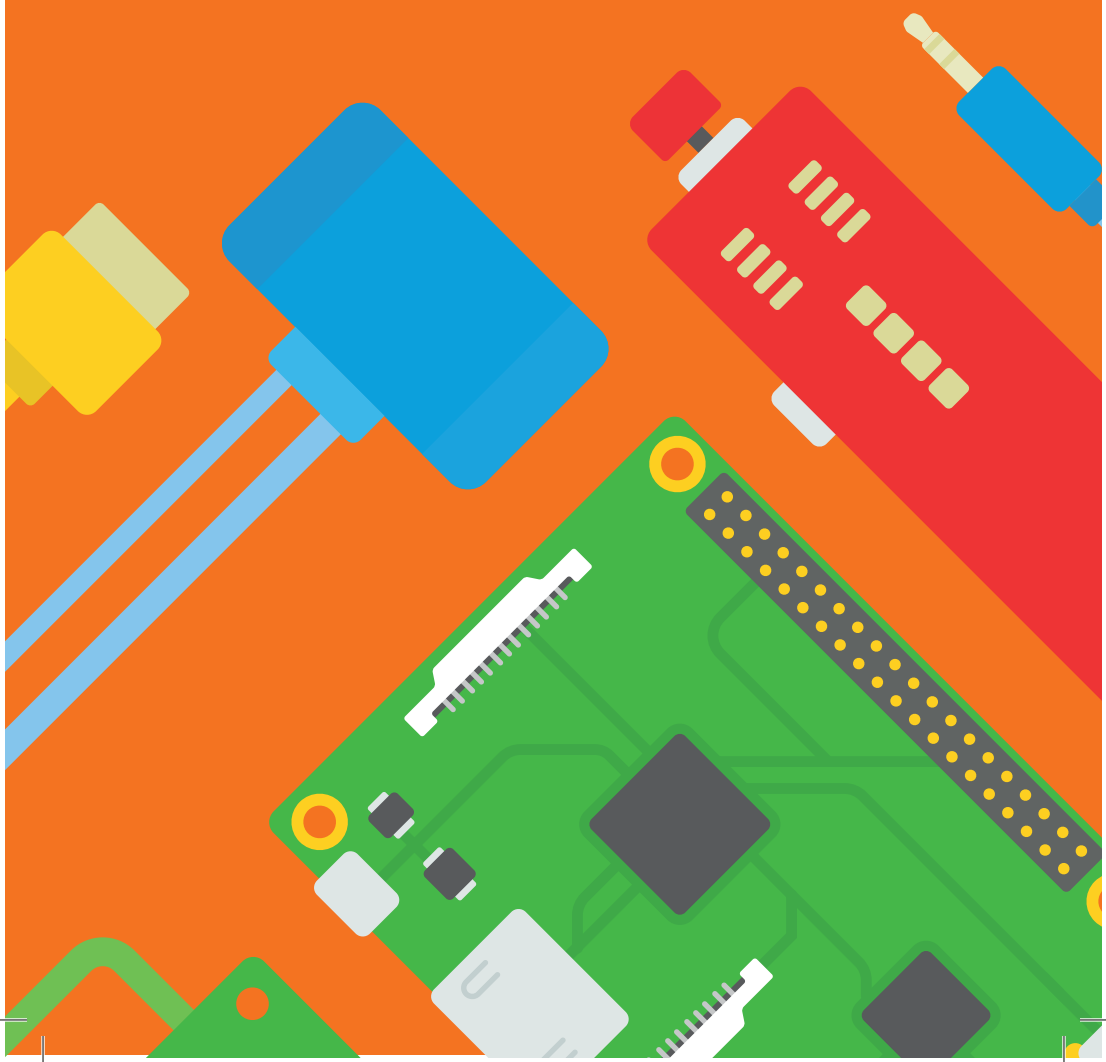
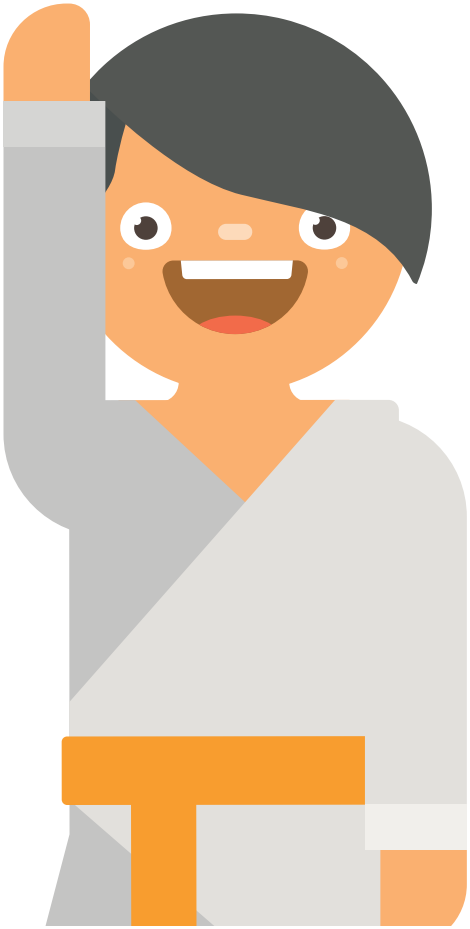
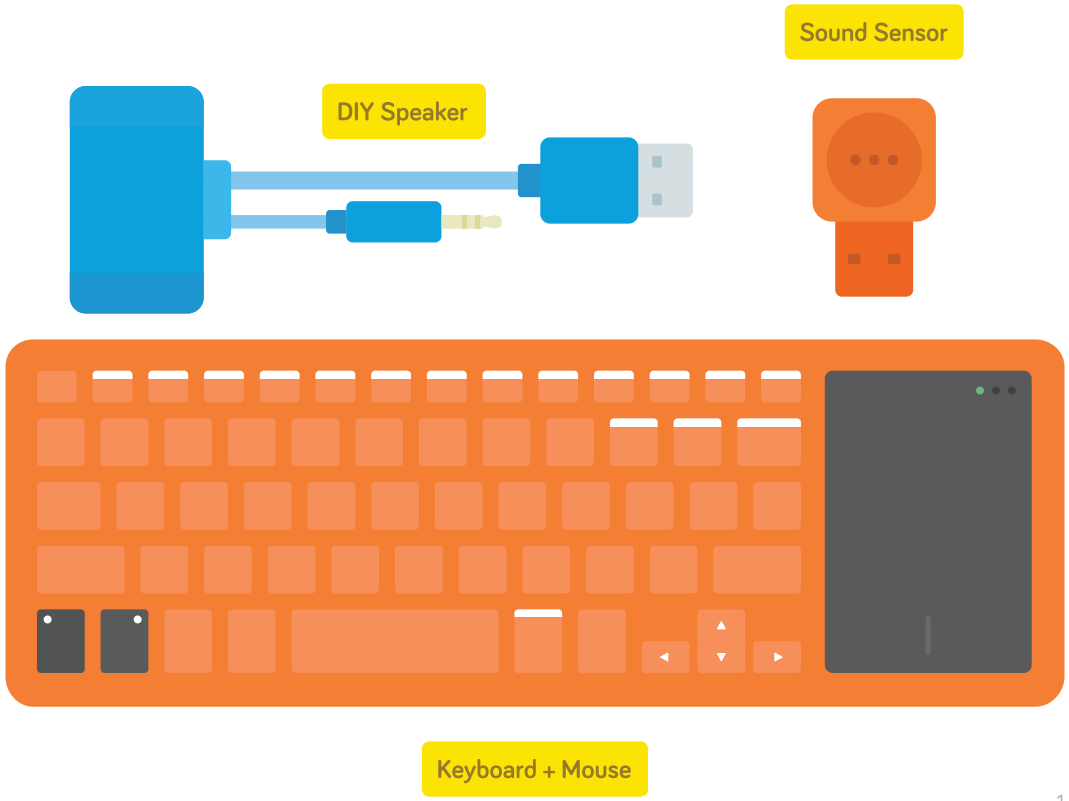
How to

make a computer



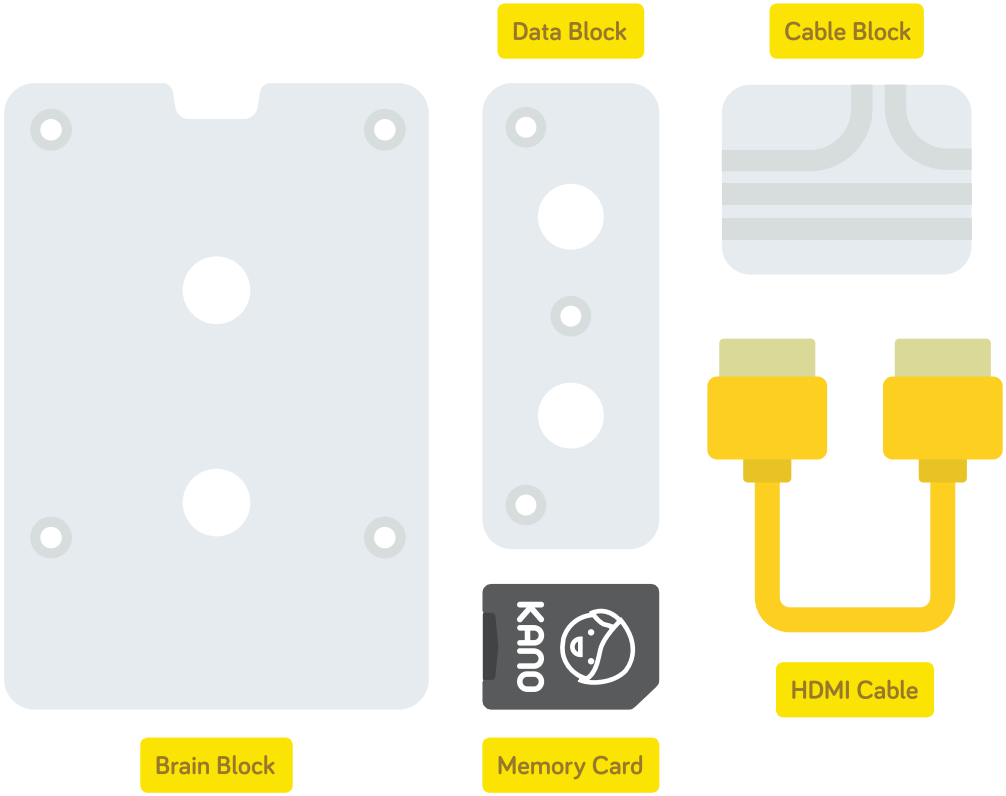


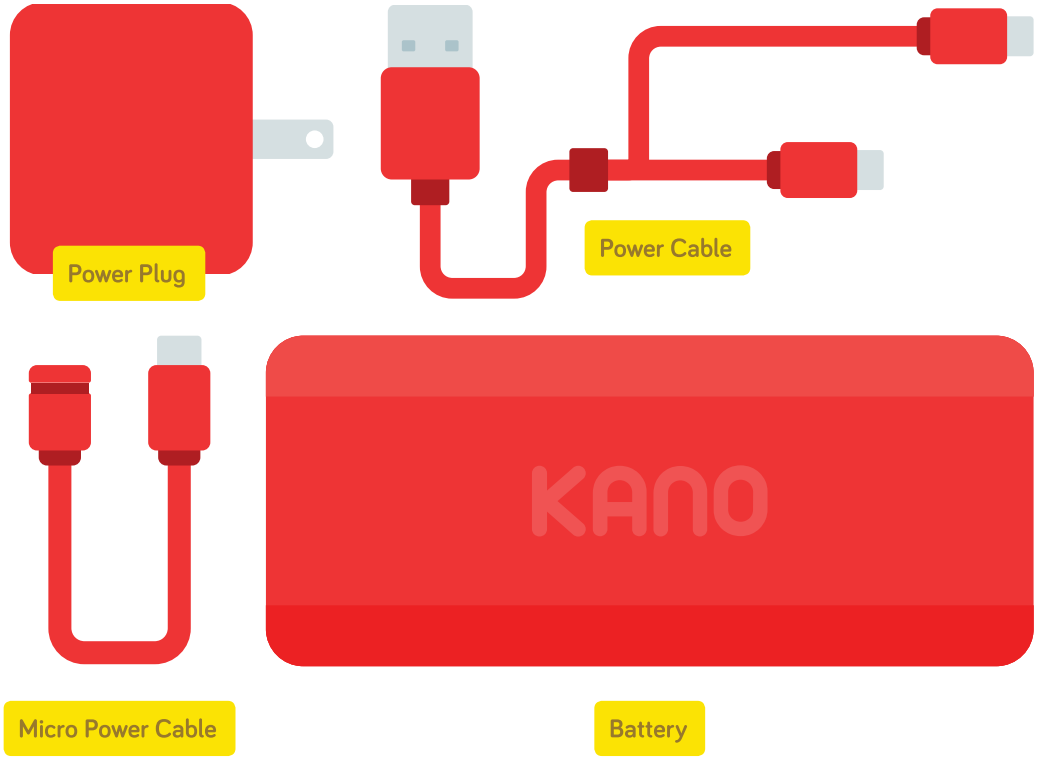
Hey! I'm Judoka, your computer companion. Ready to go?
Take out the pieces!

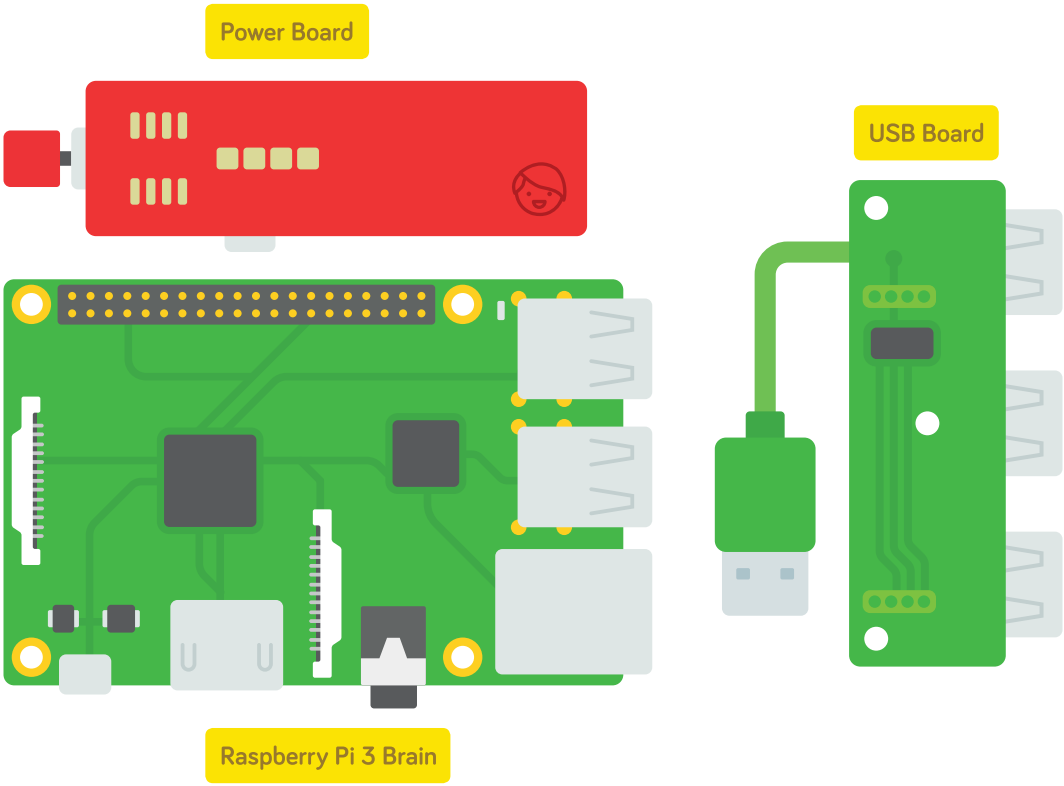

Sound Sensor
DIY Speaker
Keyboard + Mouse



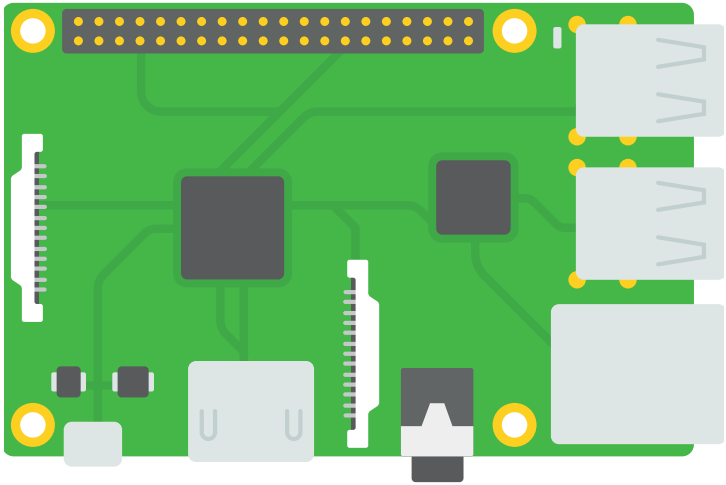
Screen


Data Block
Cable Block
KANO
HDMI Cable
Brain Block
Memory Card


Power Plug
Power Cable
KANO
Micro Power Cable
Battery


Power Board
USB Board
Raspberry Pi 3 Brain

This is your computer's brain



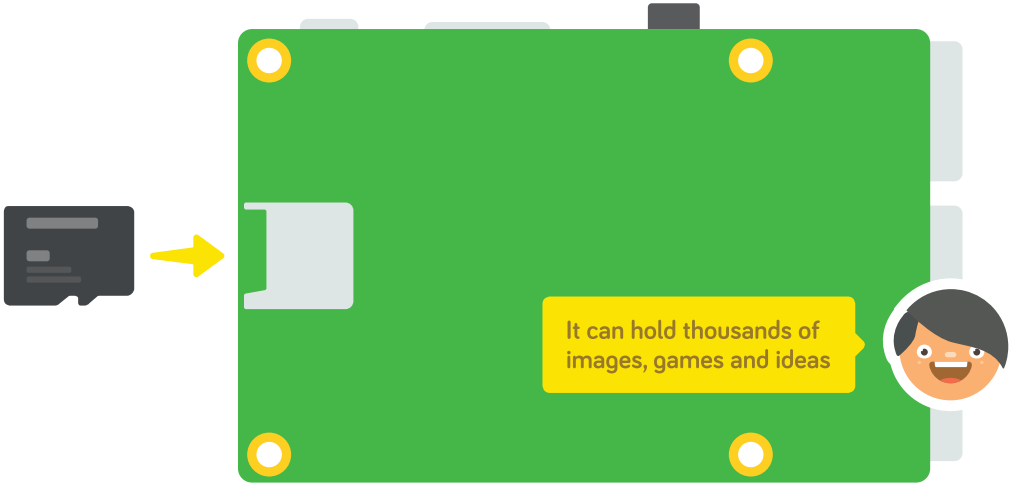
It's tiny, but powerful

Let's give your brain new powers



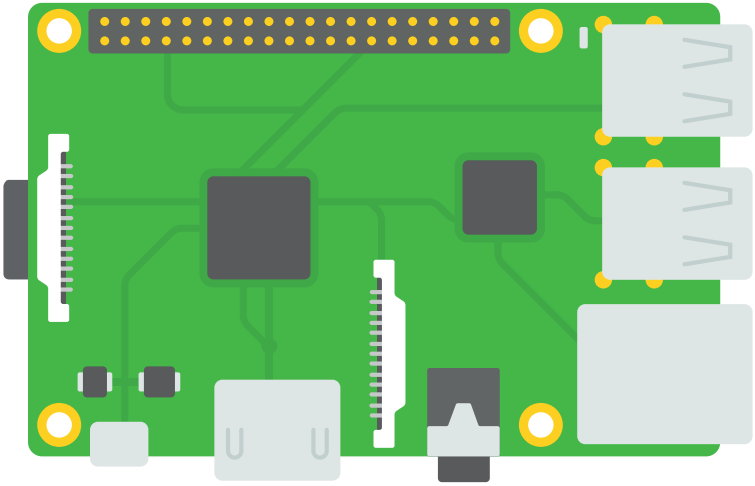
Grab the memory card, and slide out the micro card

Turn the brain over



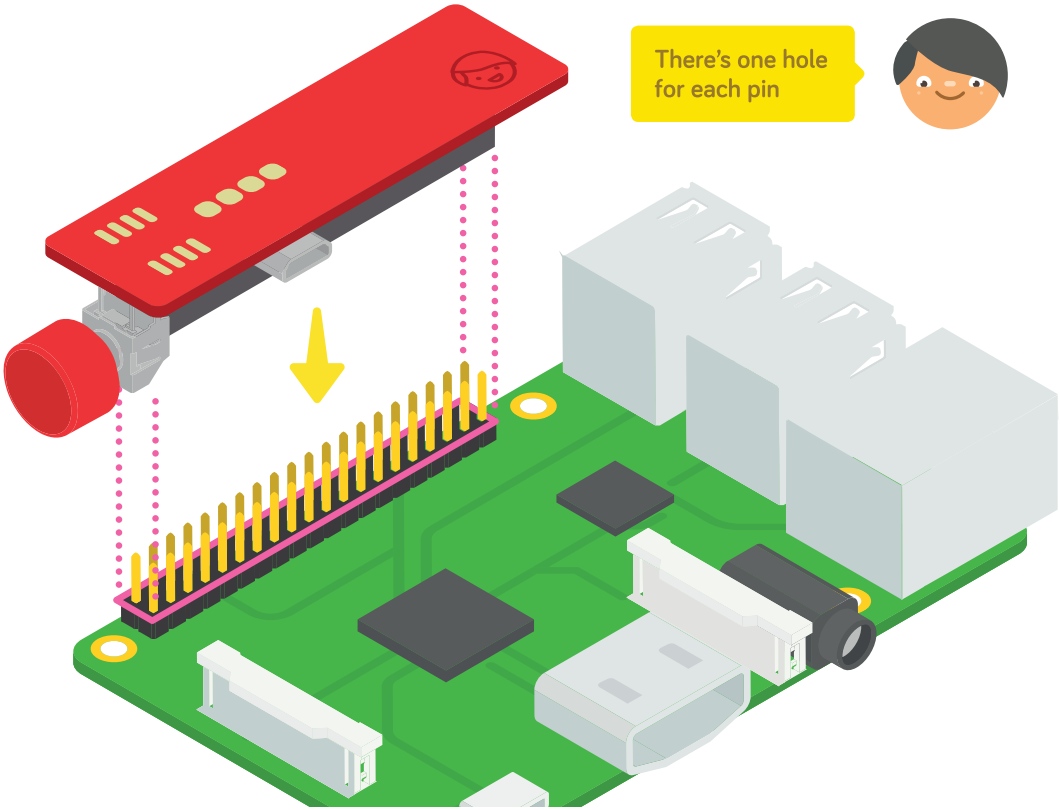
Slide in the micro card securely

Great!

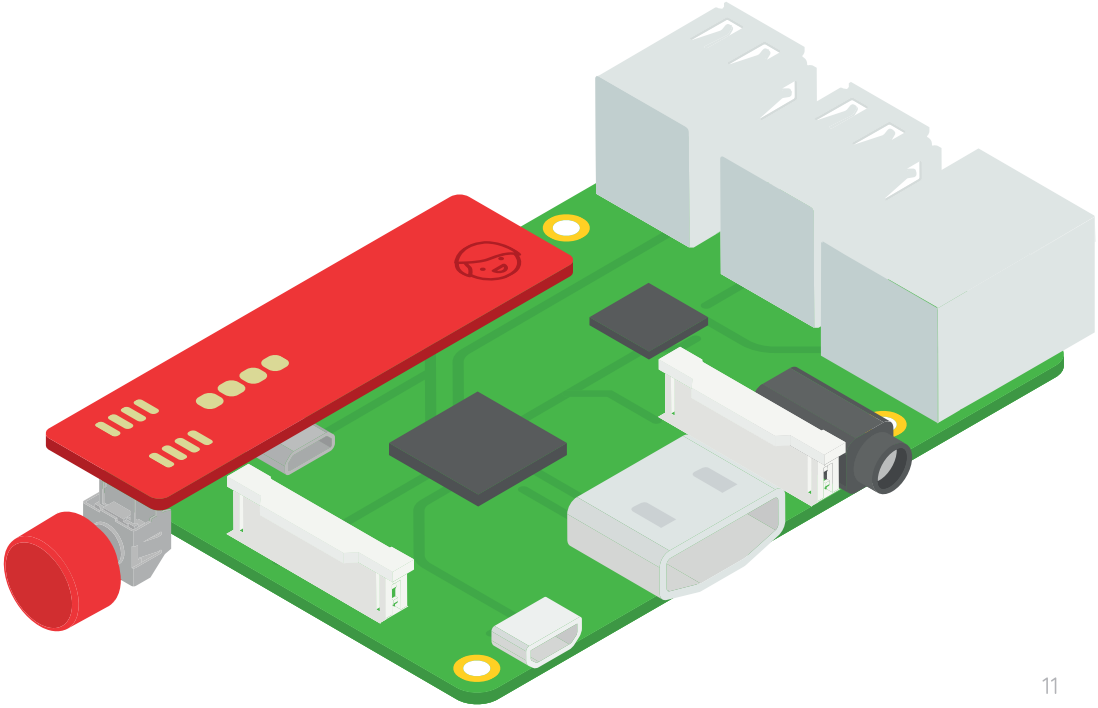


Now lets add an on/off button

Grab your power board and line it up with the brain's pins



Push it onto the brain



Now push it all the way down



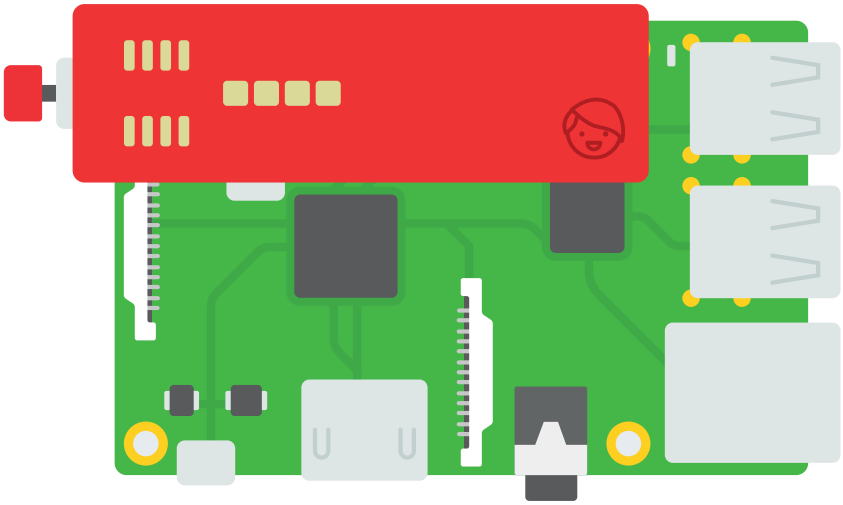
Great!



You connected the board to the
General Purpose Input and Output pins

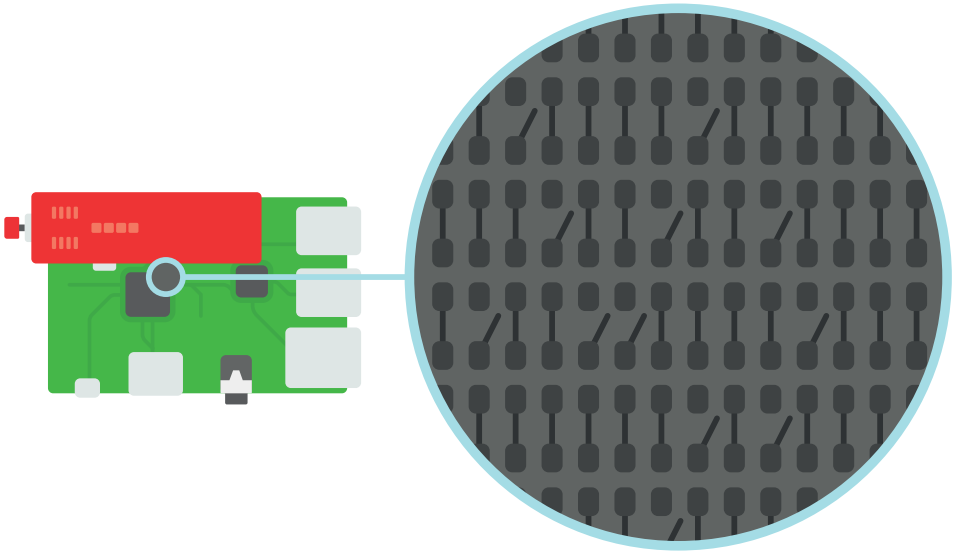


Now you have a power button



Fantastic!

How does your computer think? If you look deep inside...

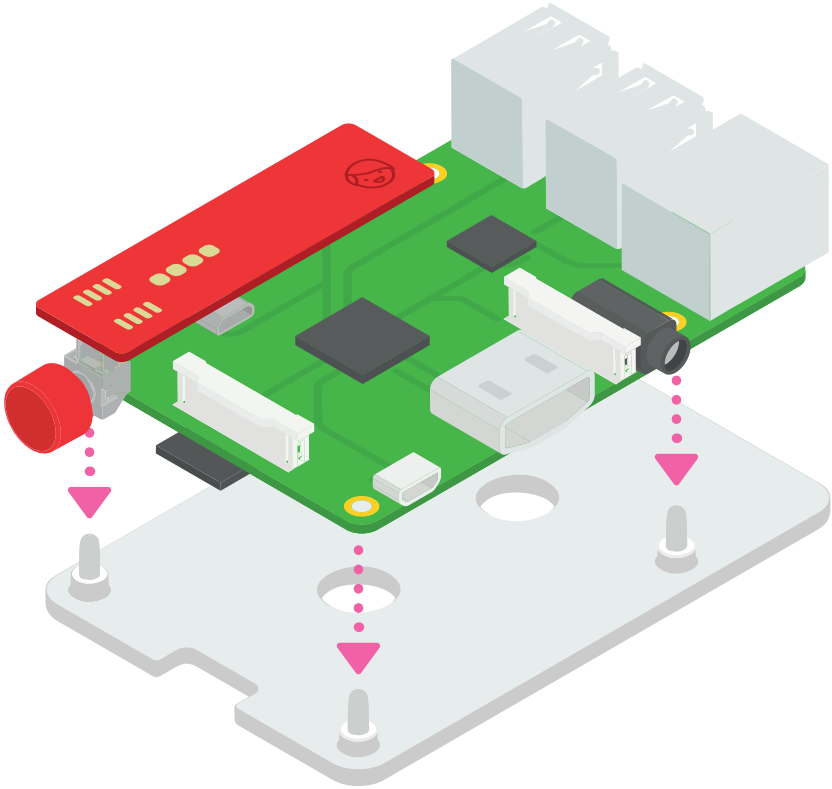


It's made of billions of electric switches

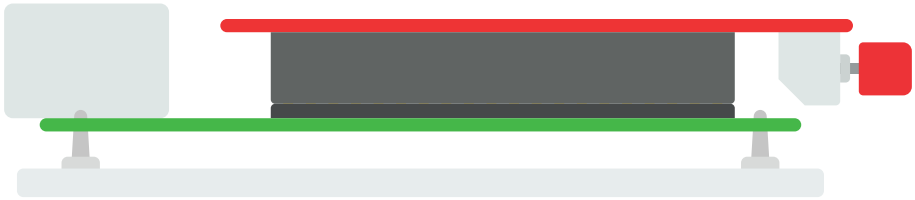
Grab the brain block

This will keep the brain in place

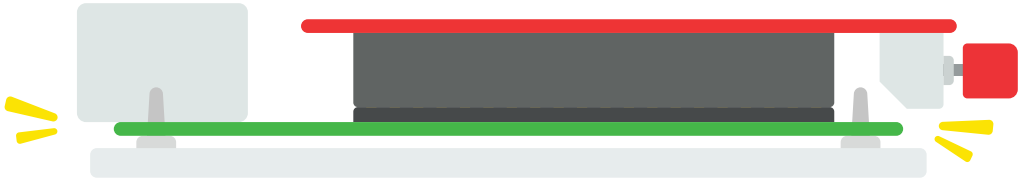
Push the brain onto the block, using the holes



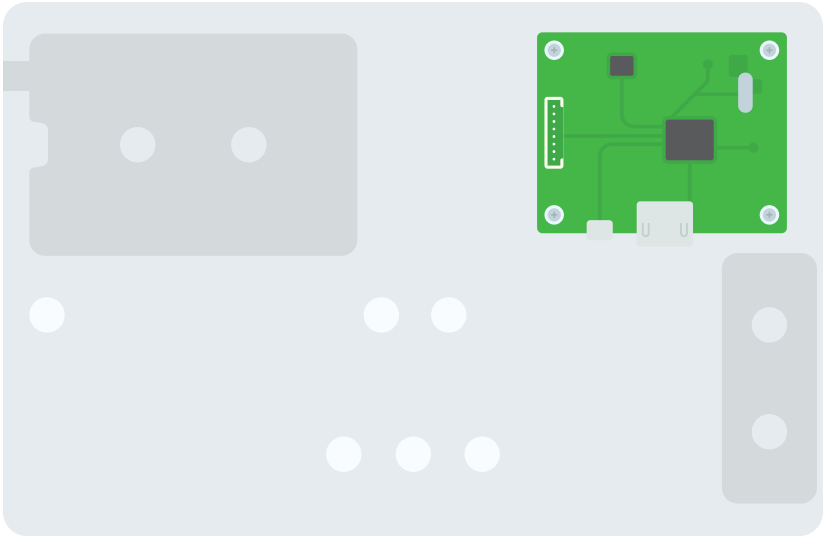
Push it all the way down



Make sure it's snug

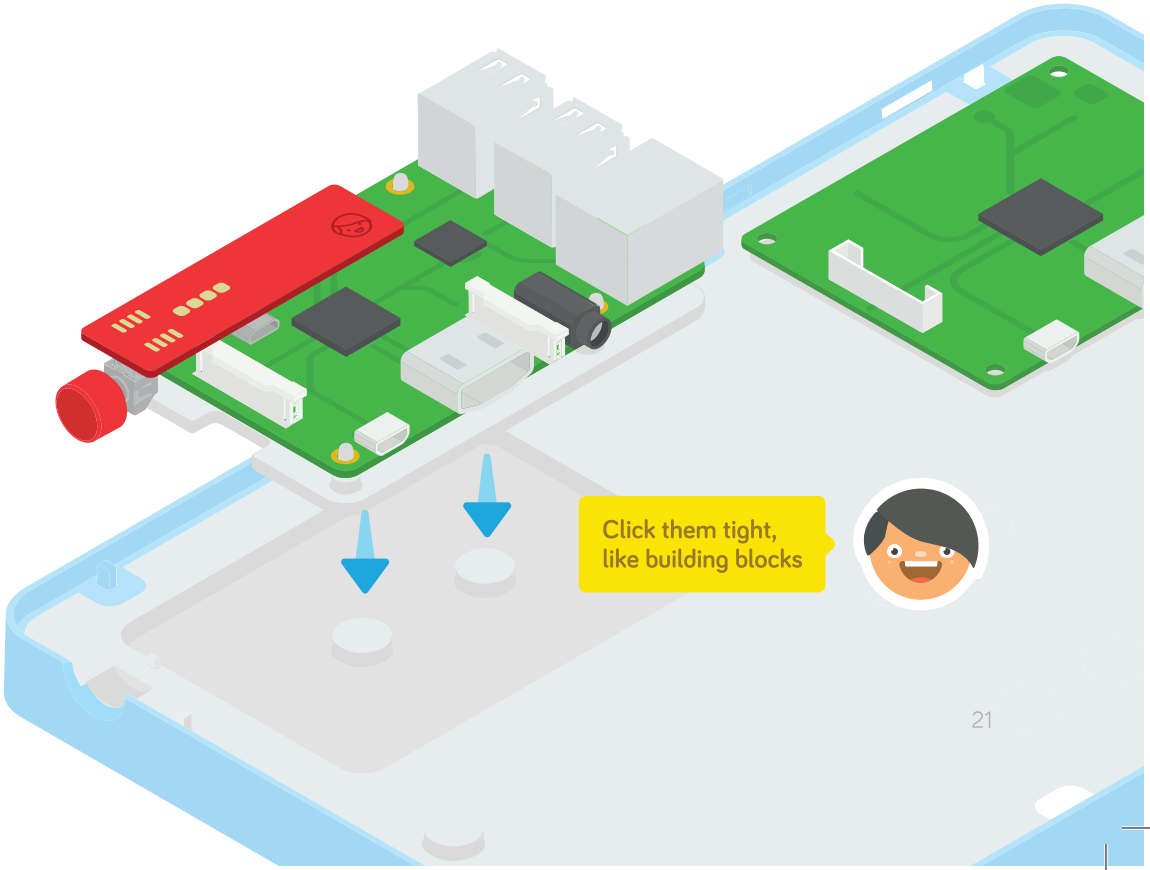


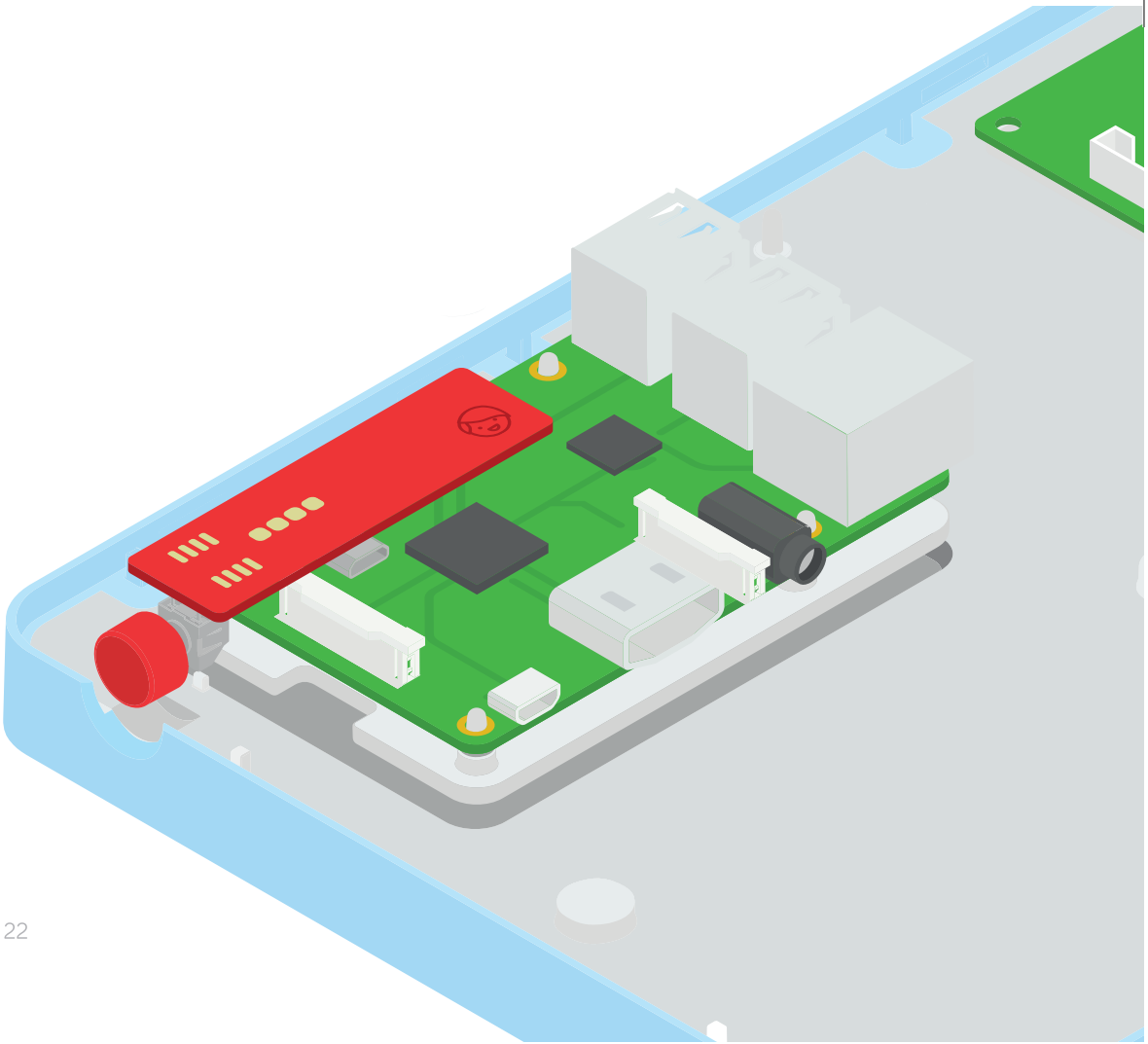
Pick up the screen. Flip it over

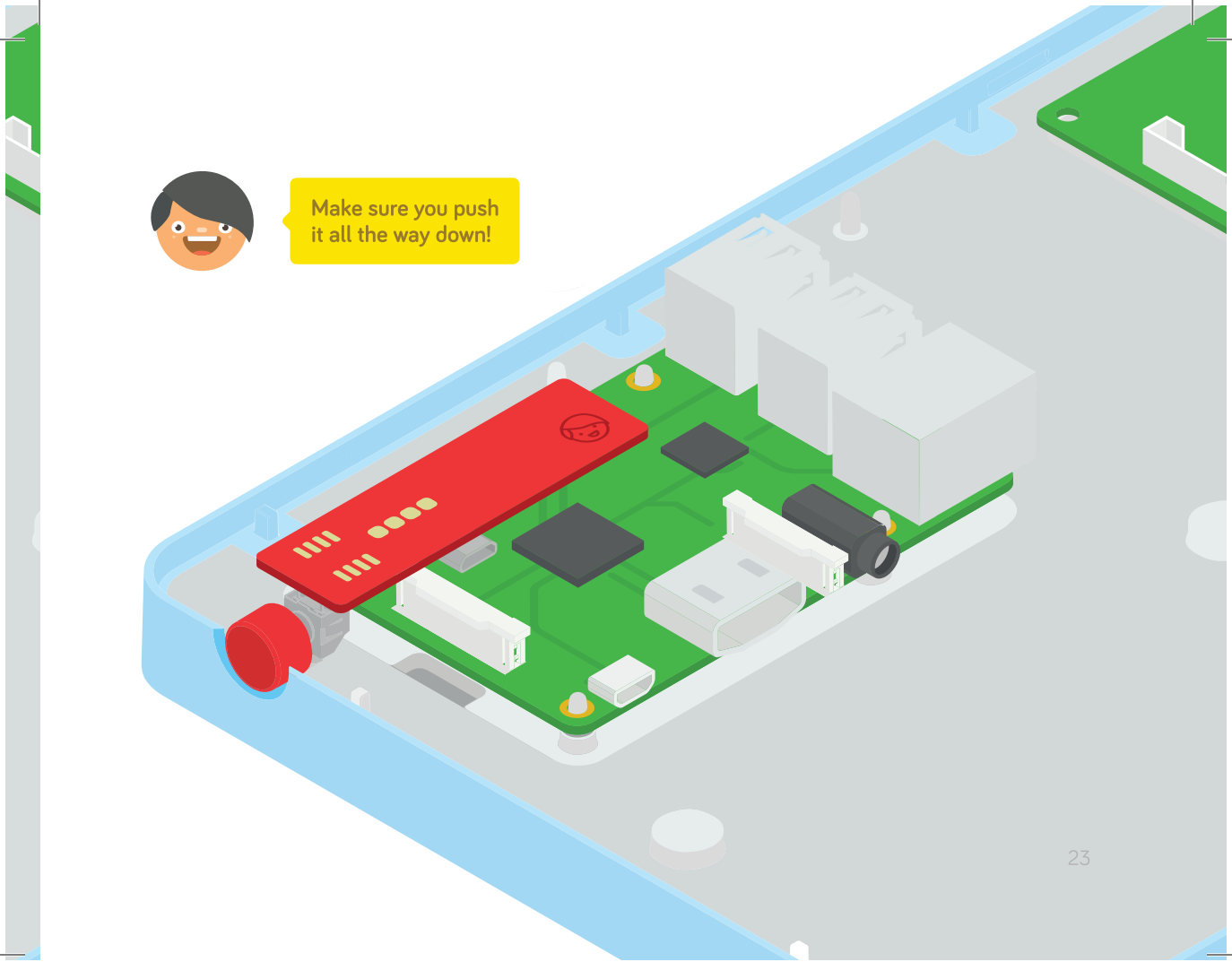


The back is where all our parts will connect together

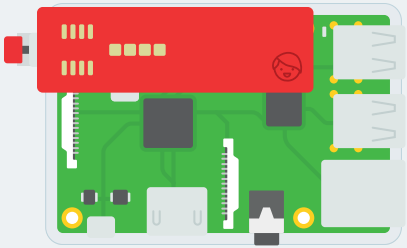
Now plug the brain into the screen

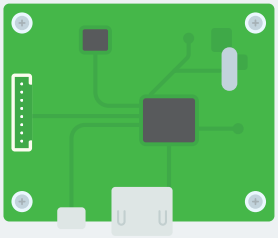





Make sure you push
it all the way down!

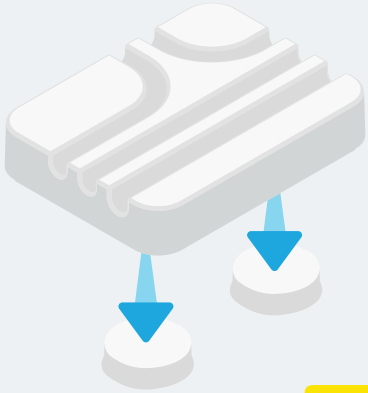
Great! Brain in place

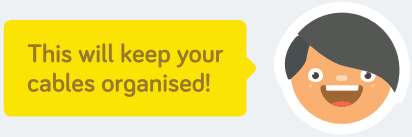




Let's prepare for cables!

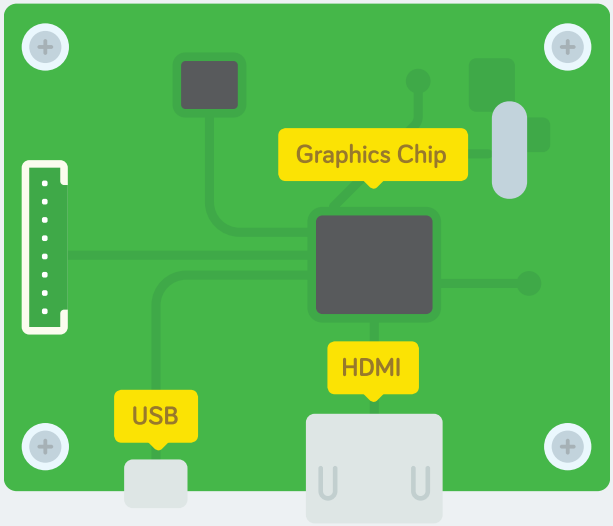
Grab the cable block





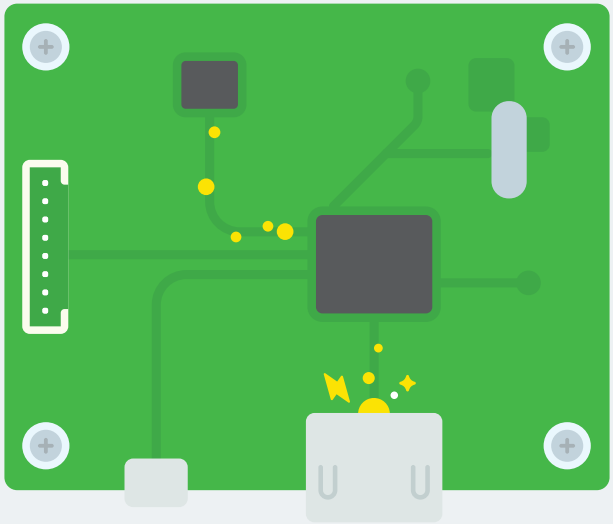
Snap it onto the screen

Next, can you see the driver board?



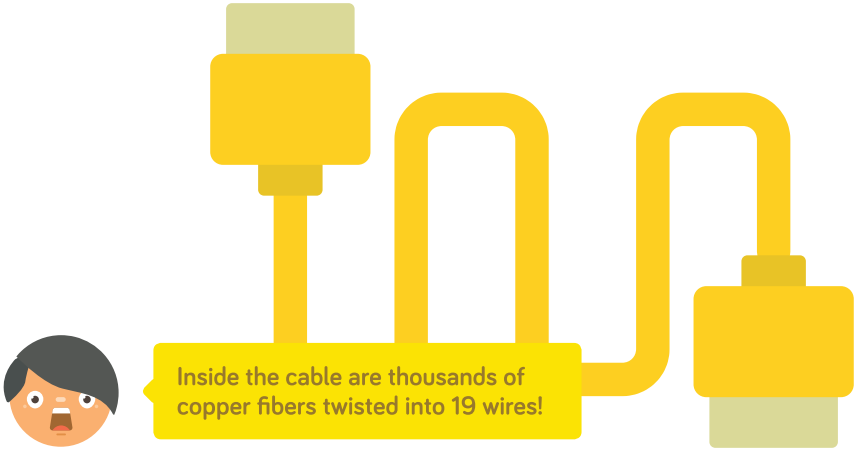
It's the screen's command center

The driver board gets millions of messages from your computer every second



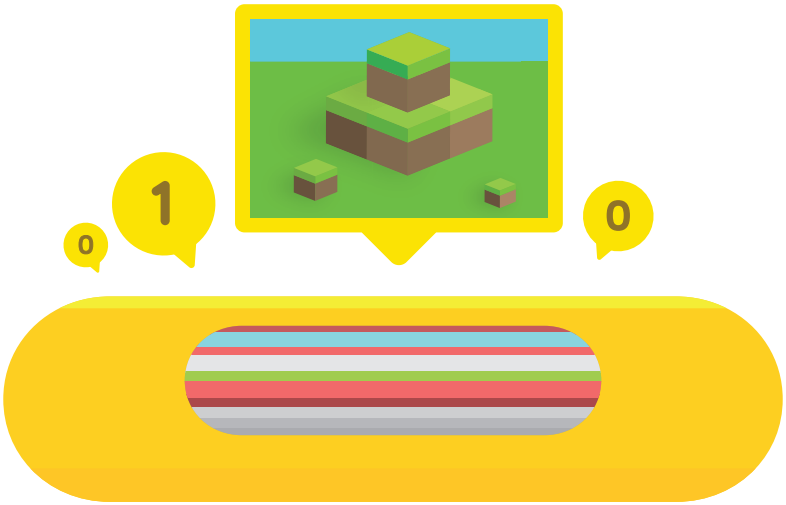
...and passes them to your screen

Now let's make sure the brain speaks to the command center



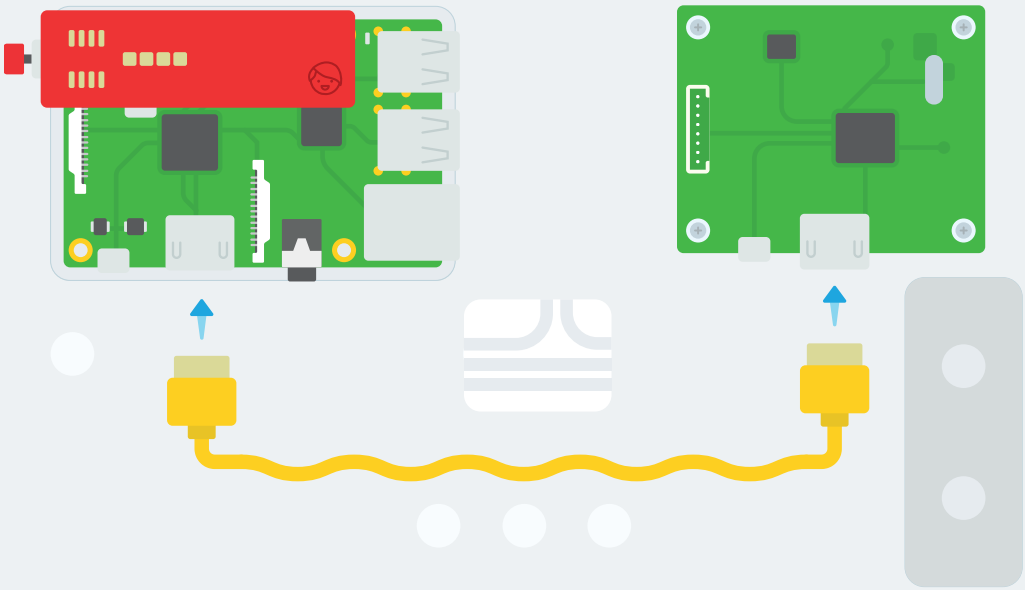
Grab the yellow HDMI cable

This cable will carry pictures from your computer to your screen



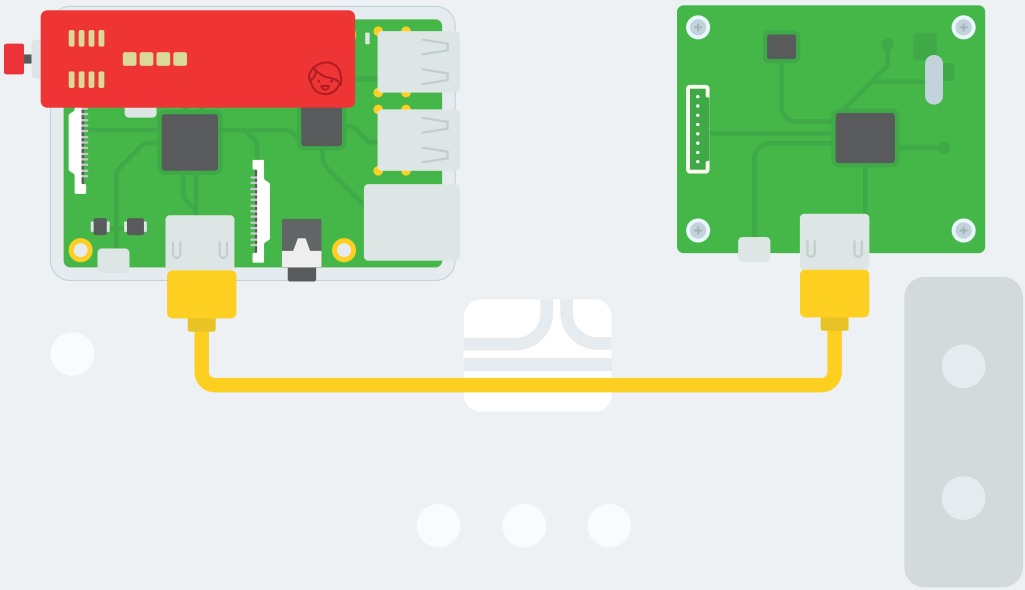
It sends images, videos, and more, as binary code

Plug the yellow cable into the brain...



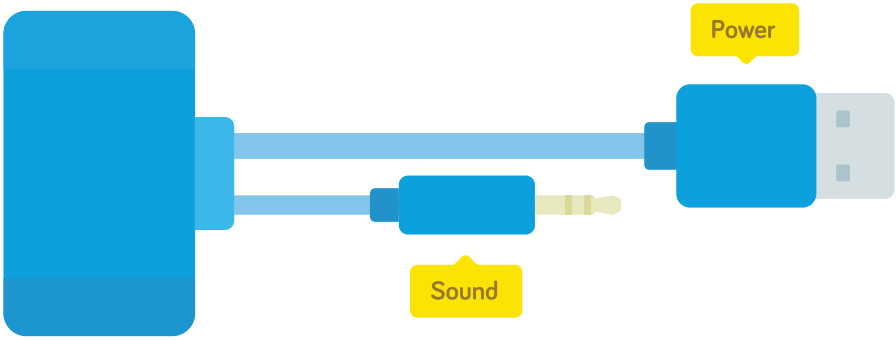
...then into the driver board

Once they're plugged in...



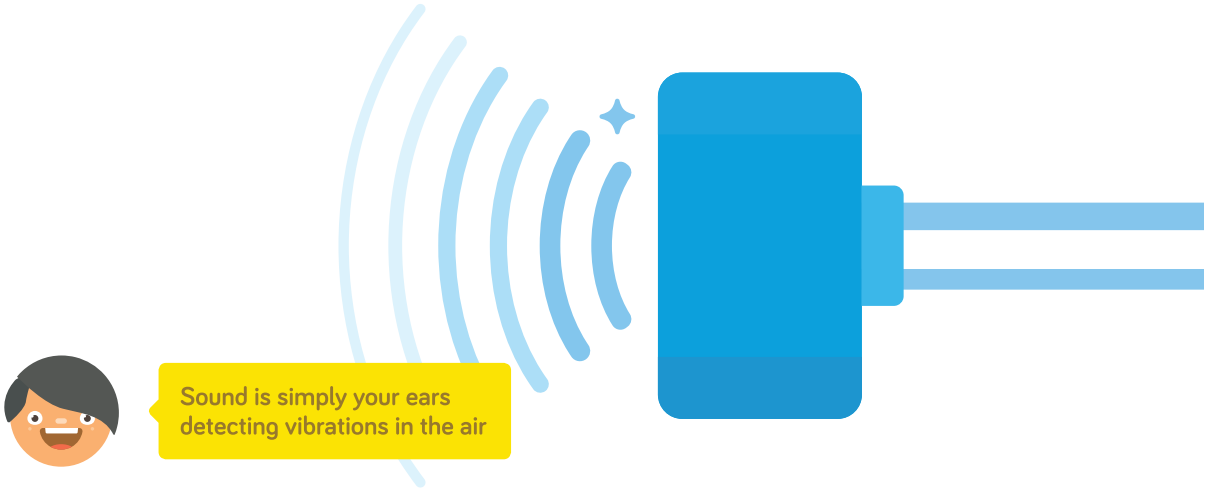
...push the cable into the channel

Time to give your computer a voice. Pick up the DIY Speaker



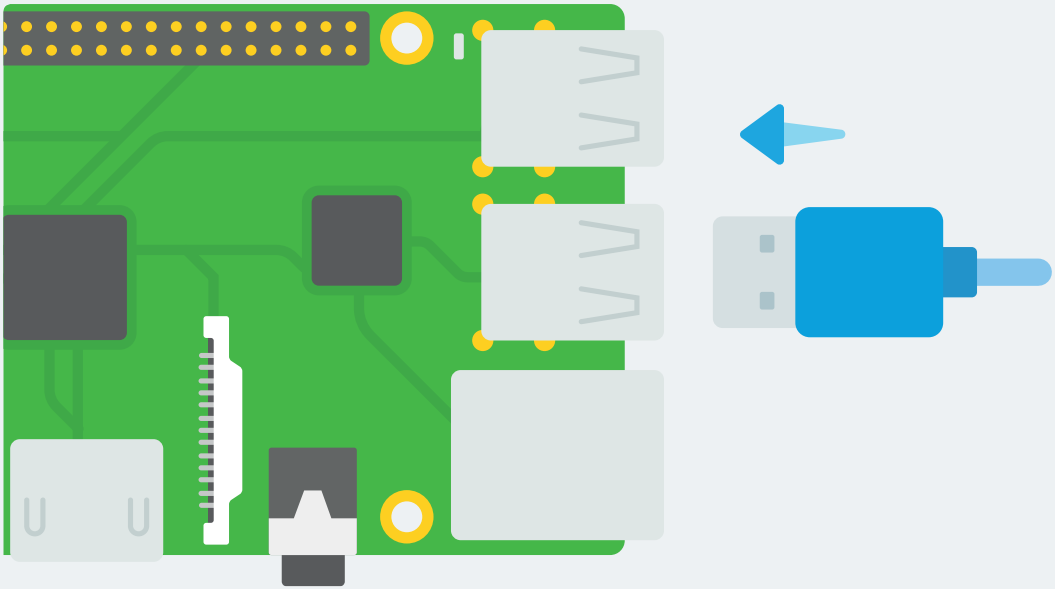
It has two cables. An audio jack for sound, and a USB cable for power

The audio cable sends signals

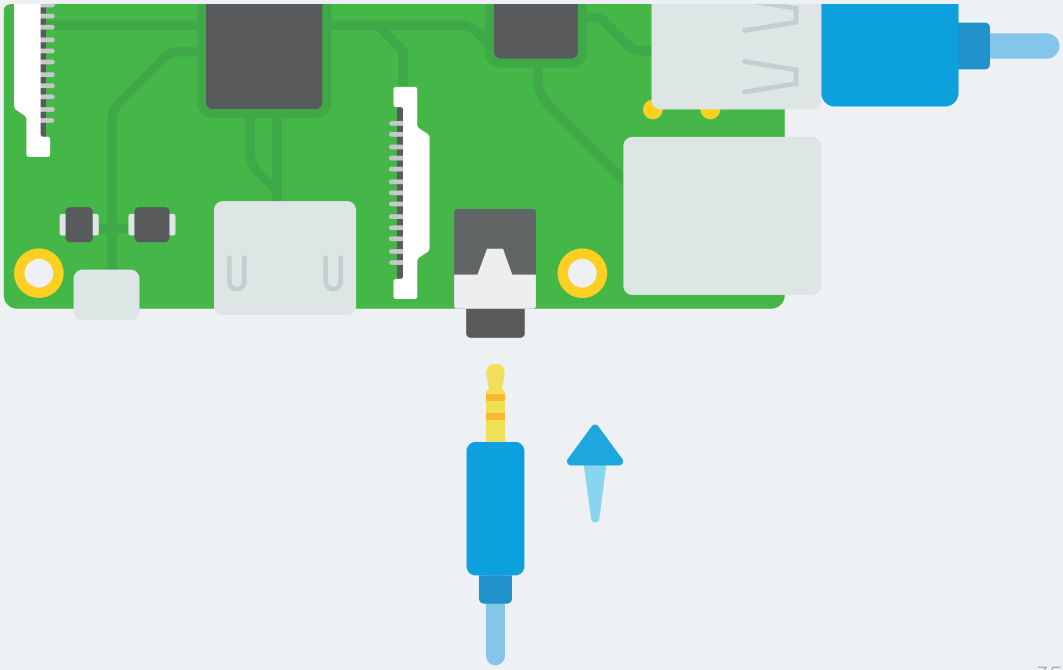


and they vibrate the magnet, membrane, and the air inside

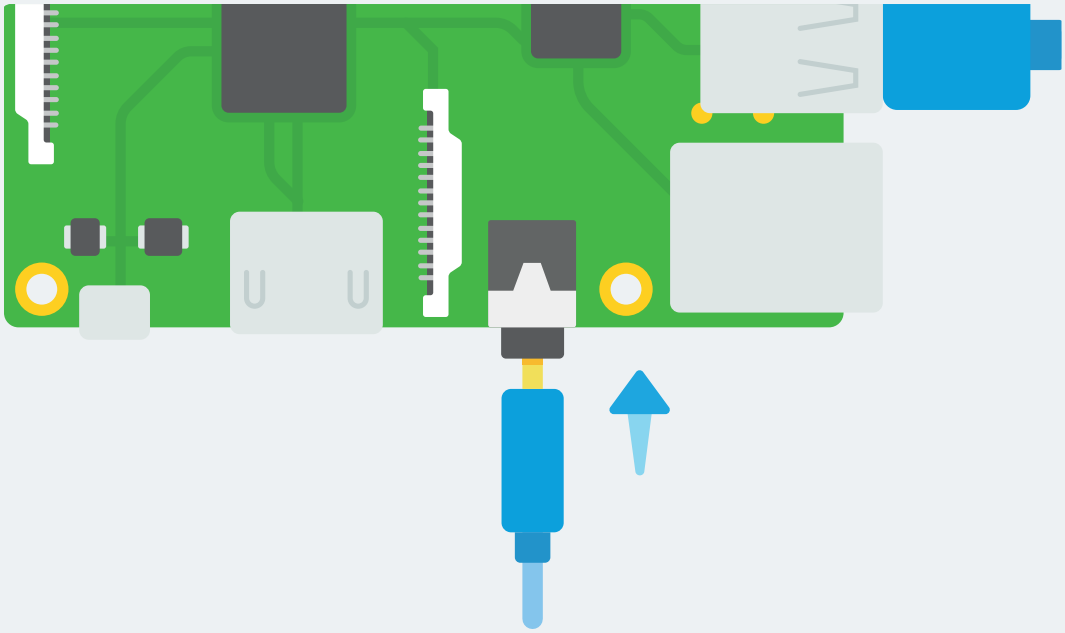
Plug the power cable in to the brain's USB



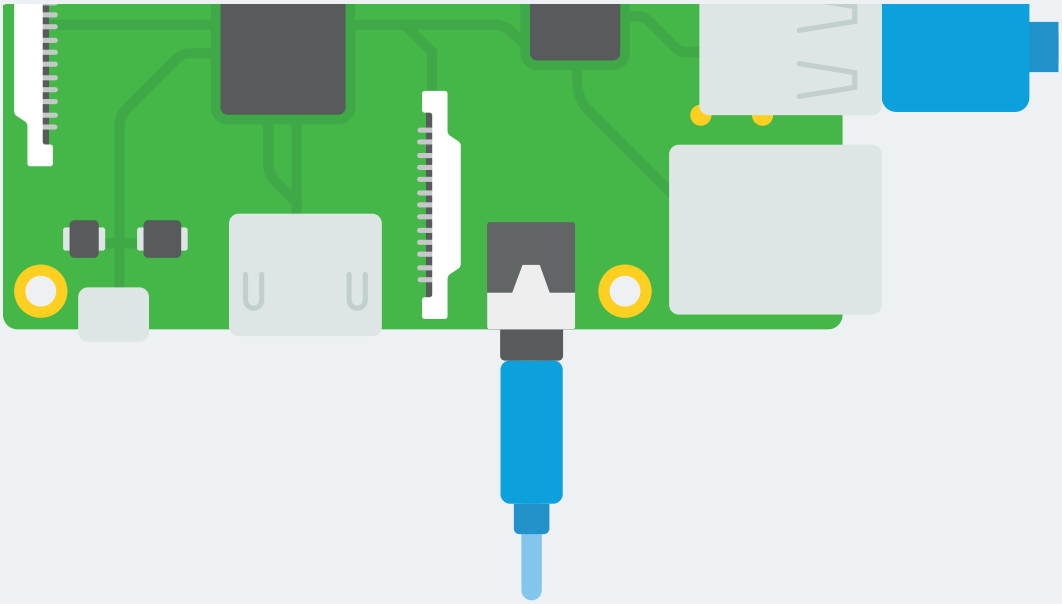
Now the audio jack

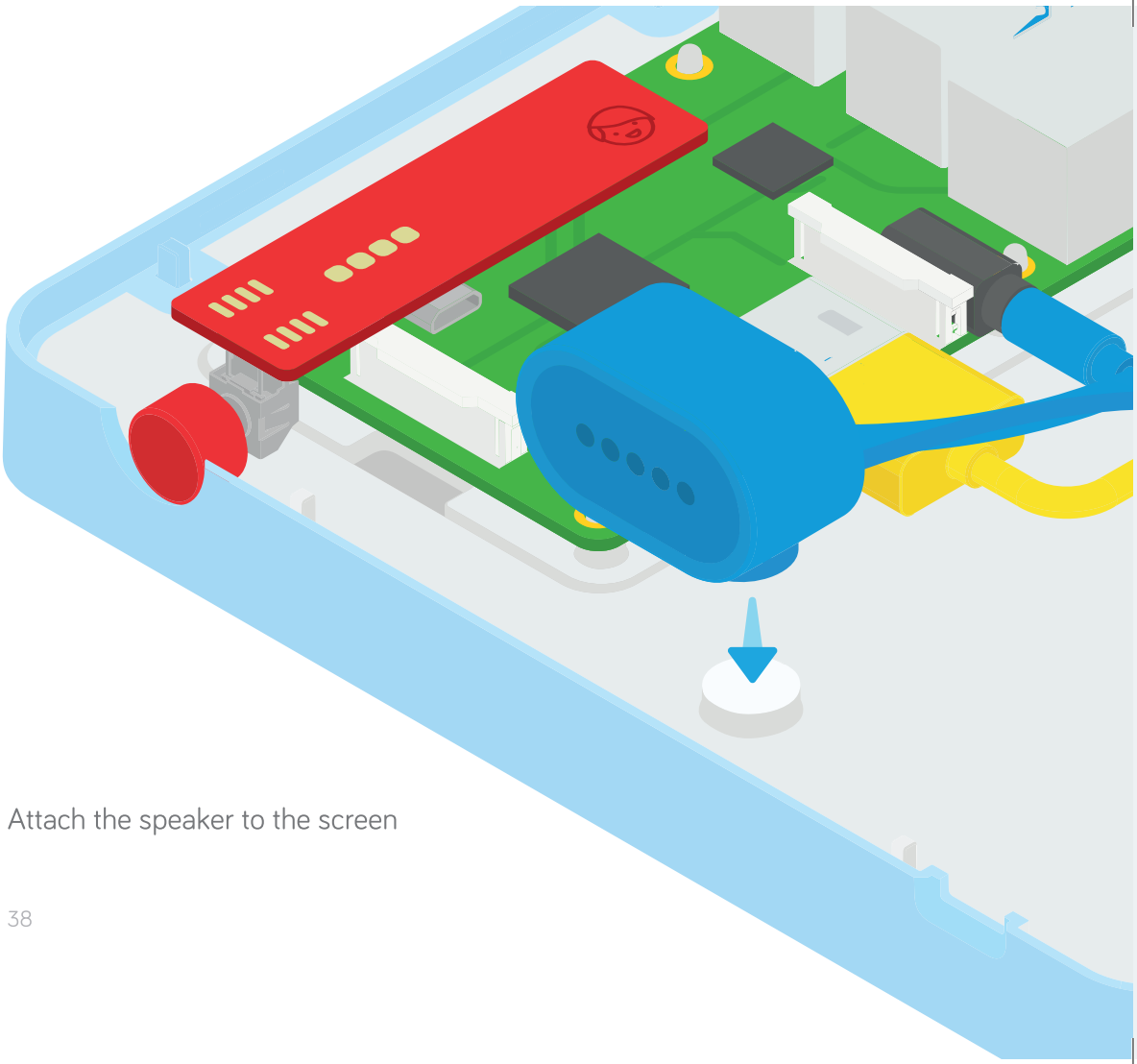


Make sure you plug the cable all the way in



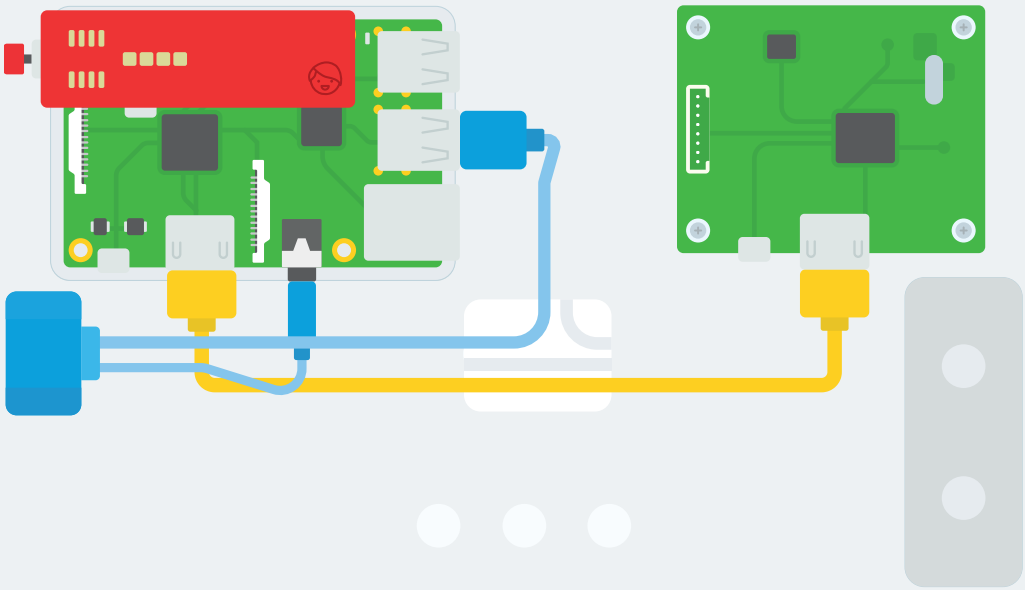
Great!





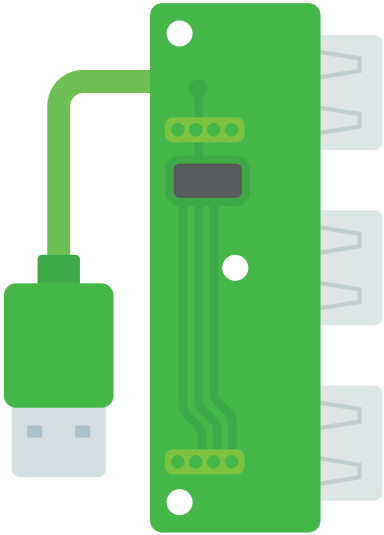
Attach the speaker to the screen

Your computer will sound great, and needs to look good too!



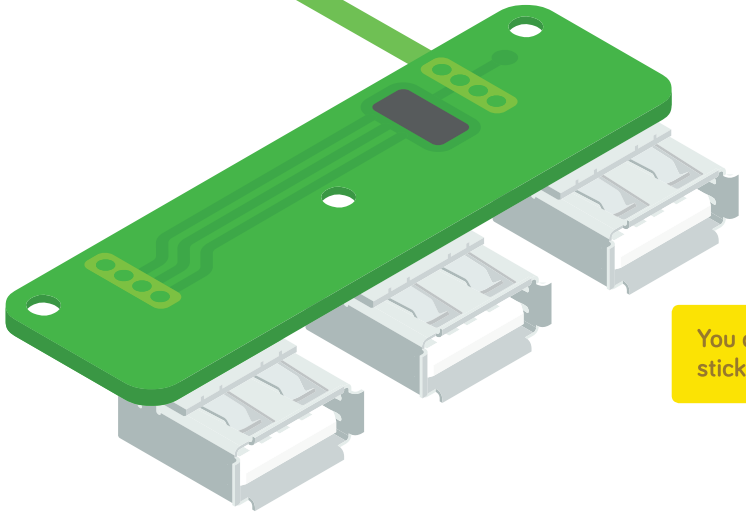
Keep the cable tidy by pushing it into the channel

Now, let's give your computer connection powers



Grab the USB hub

It has three USB ports



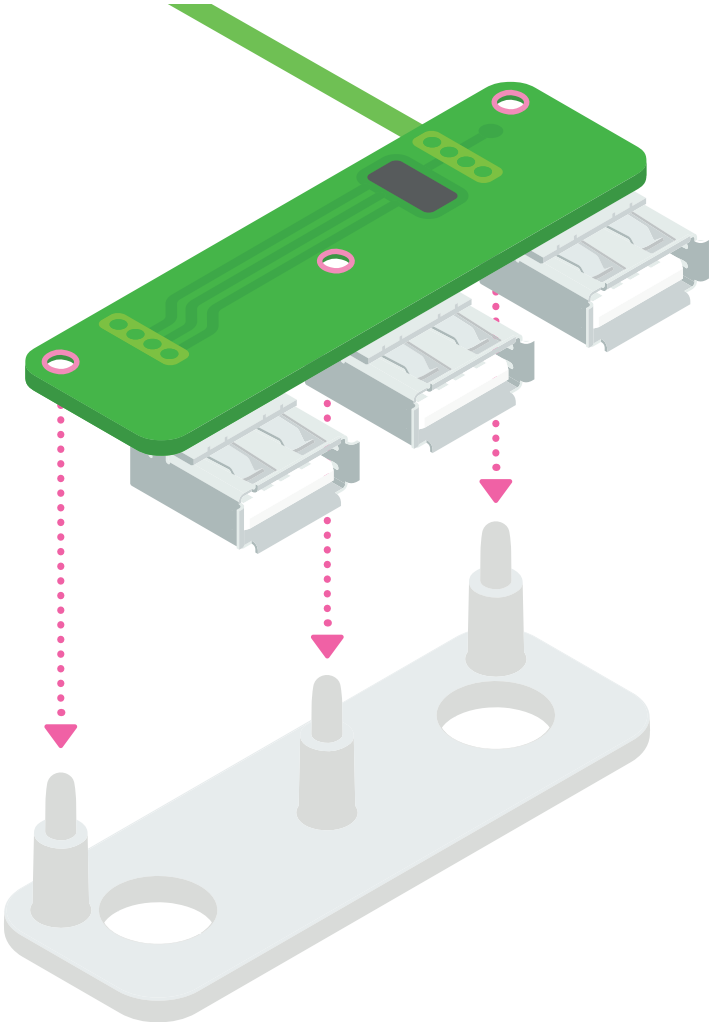
You can plug in memory sticks and Kano sensors

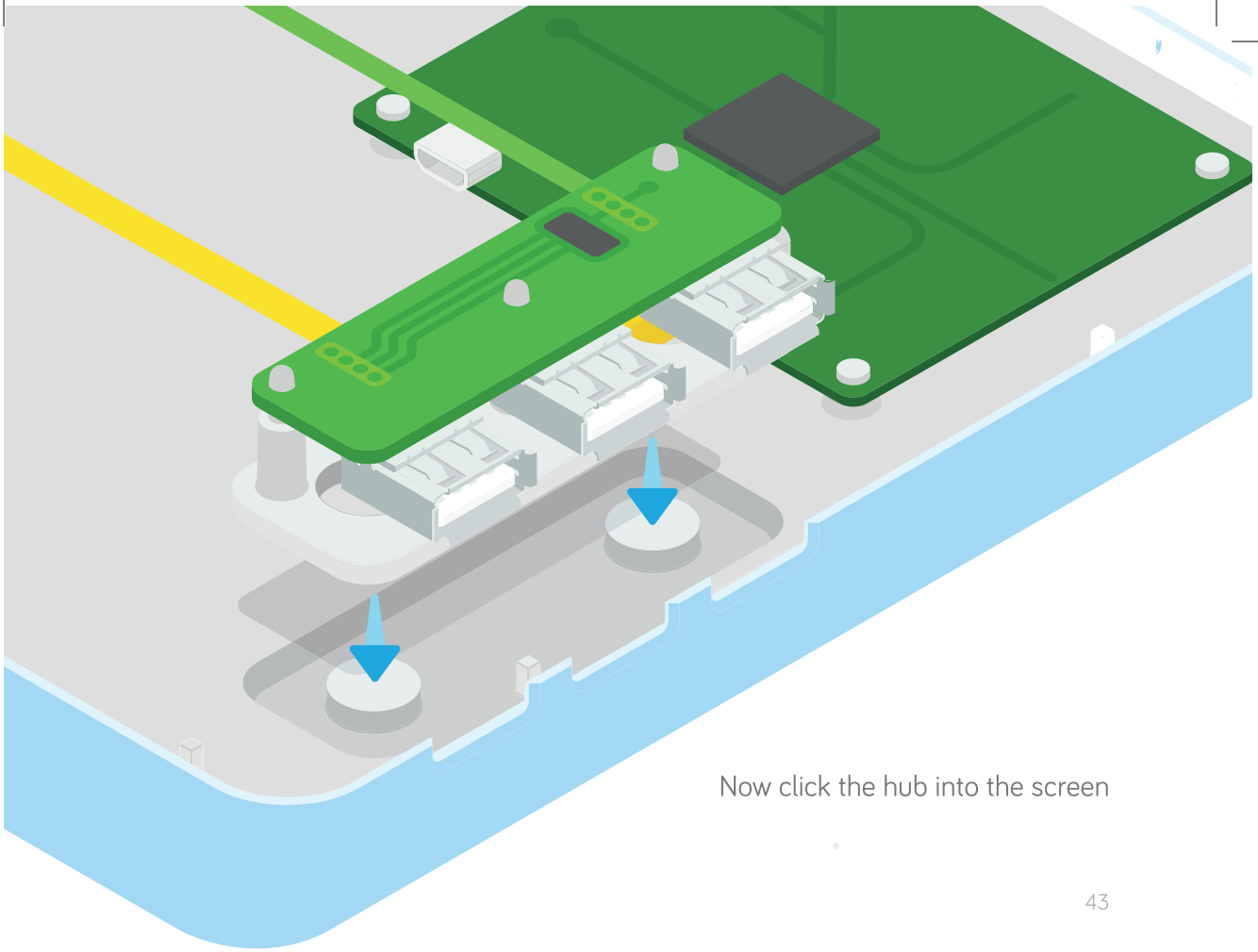


Use them to connect other technology to your computer

The USB hub also has a block to keep it in place

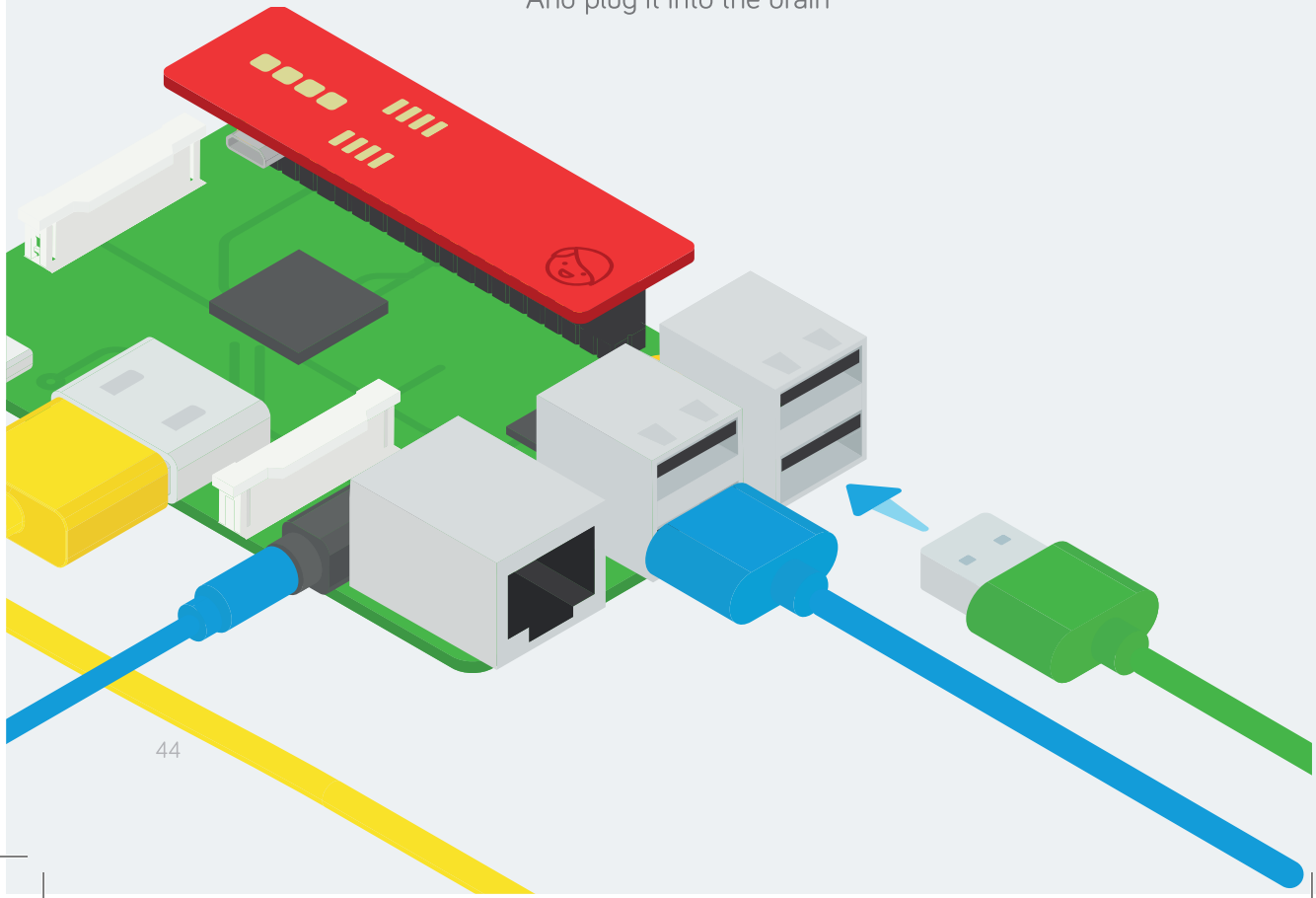
Push the hub onto the block, using the holes



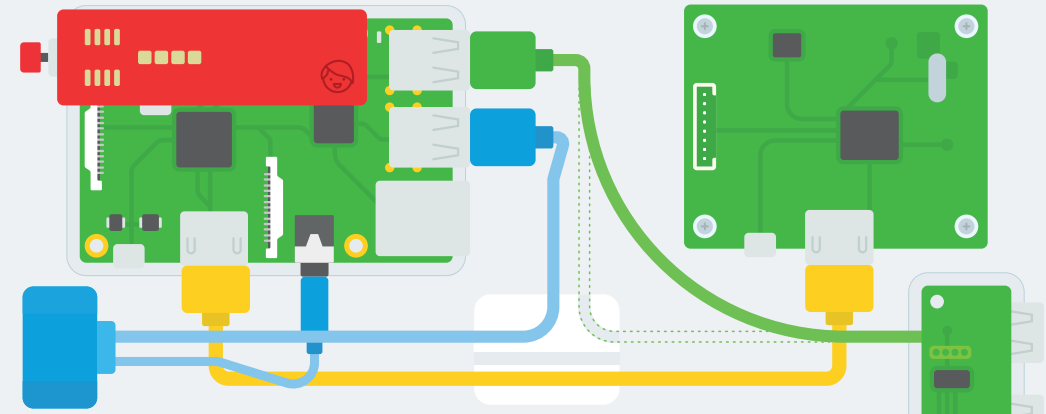


Now click the hub into the screen

And plug it into the brain



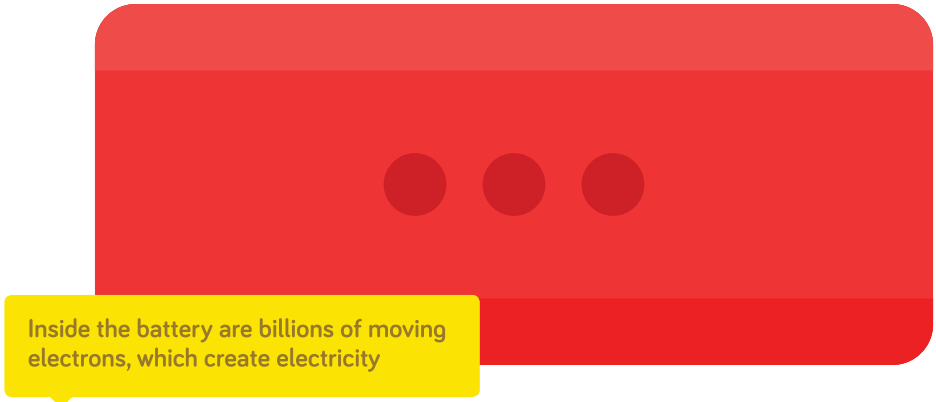
Great job, you're almost done. But there's something missing...



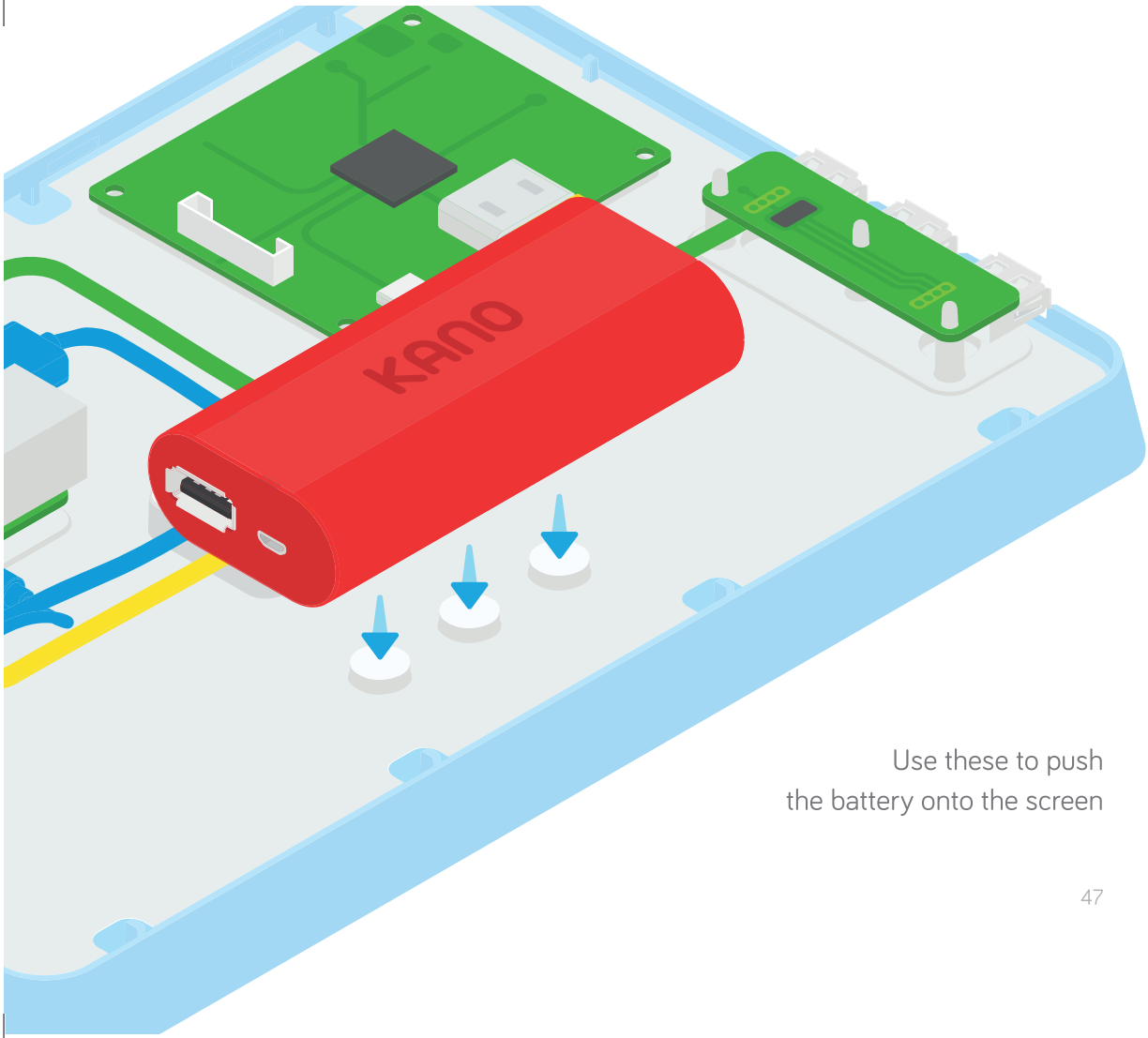


Don't forget to push the green cable into the channel

Lets add some electricity! Grab the battery

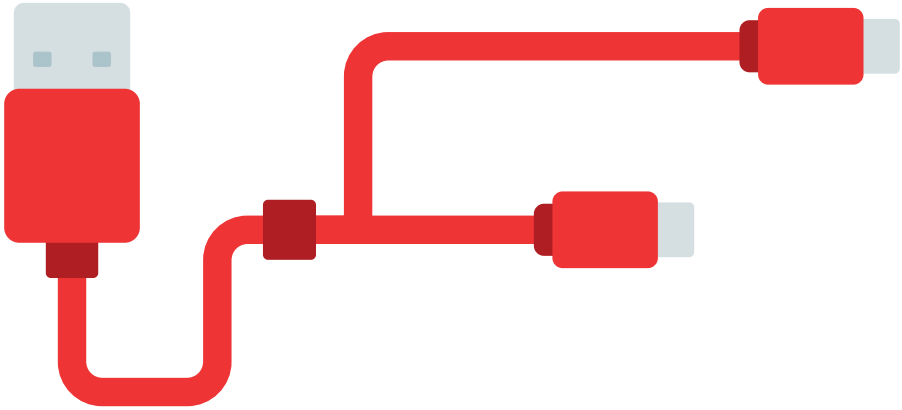


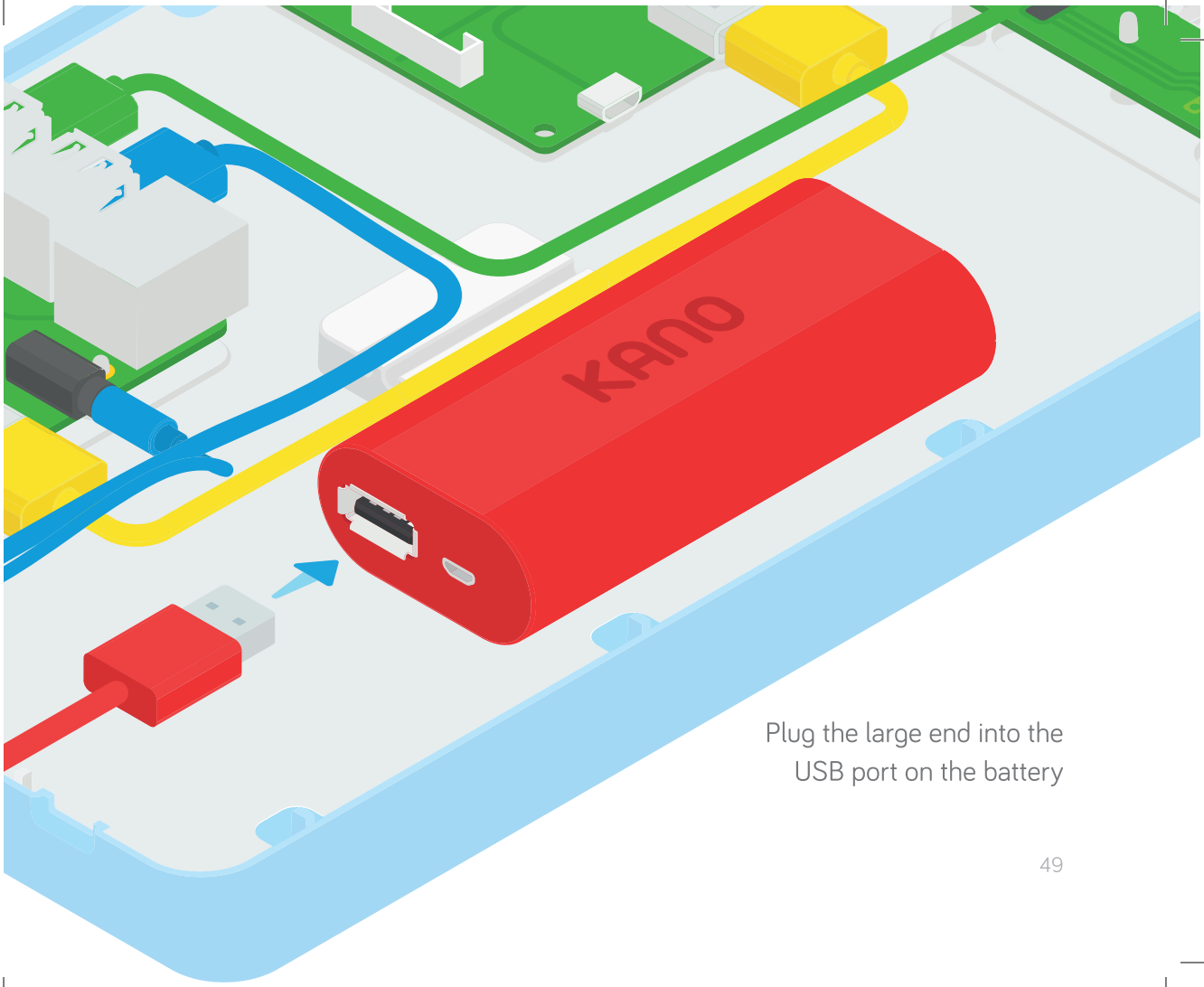
See the holes?



Use these to push
the battery onto the screen

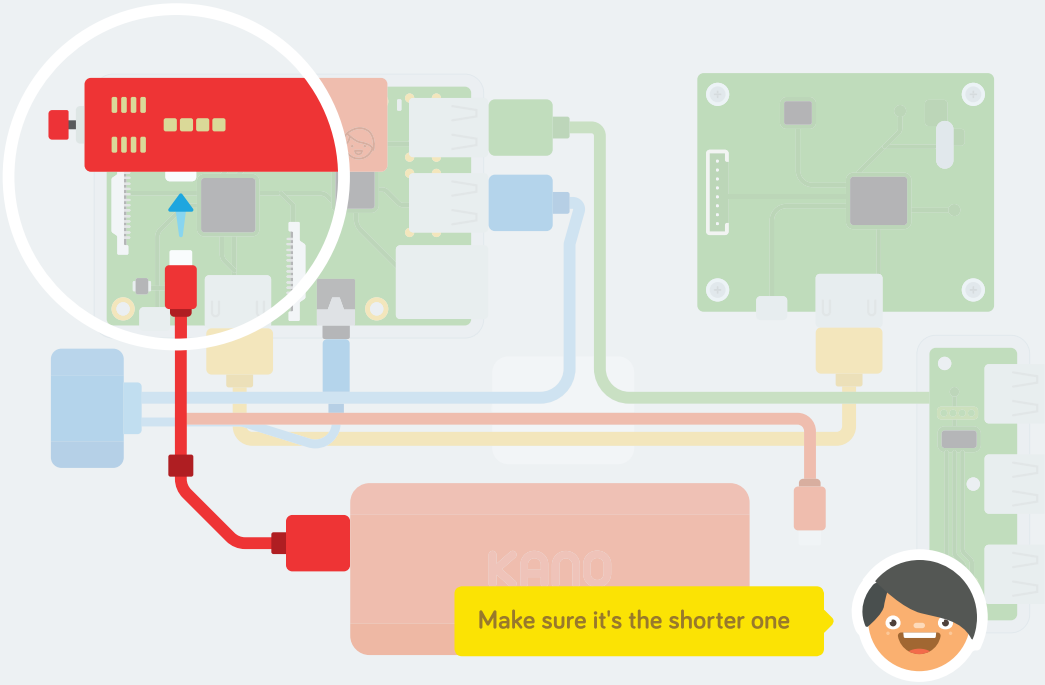
Now, grab the red power cable



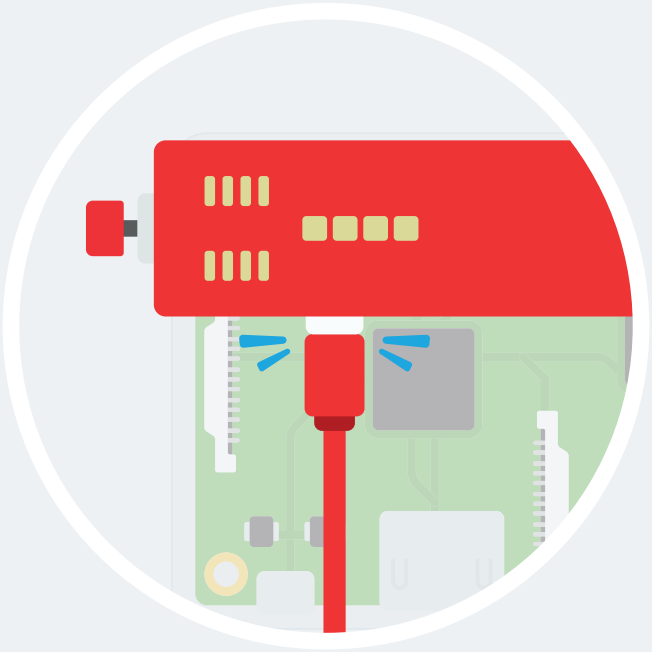


Plug the large end into the
USB port on the battery

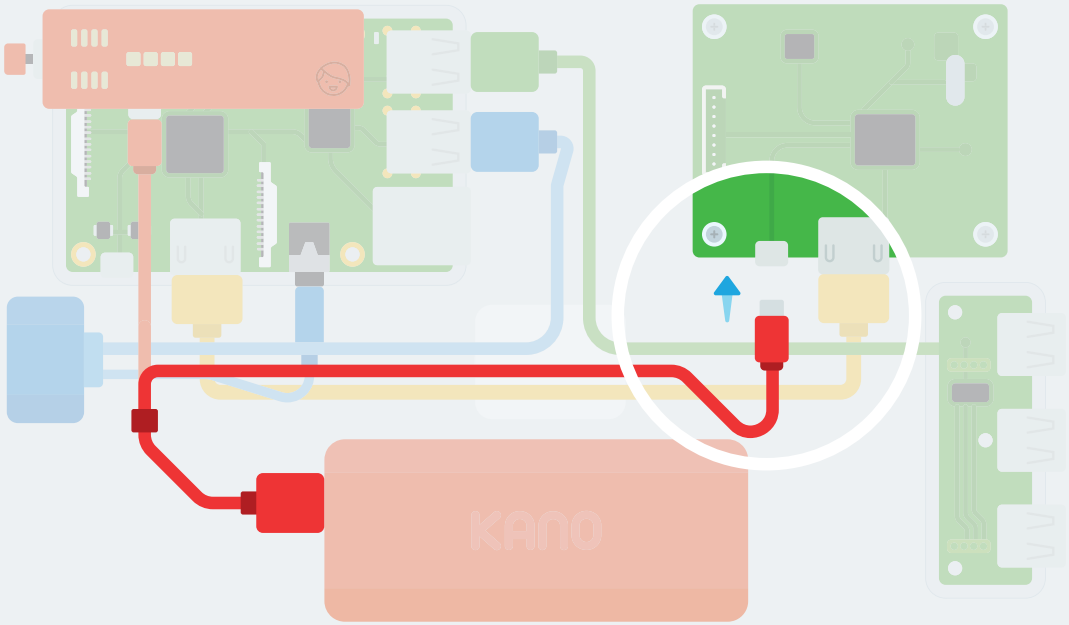
Grab the short end of the power cable...



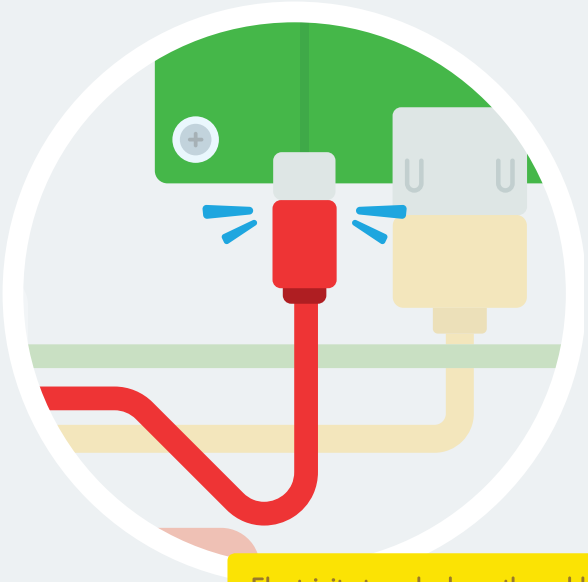
...and plug it into the power board



Now take the other end...



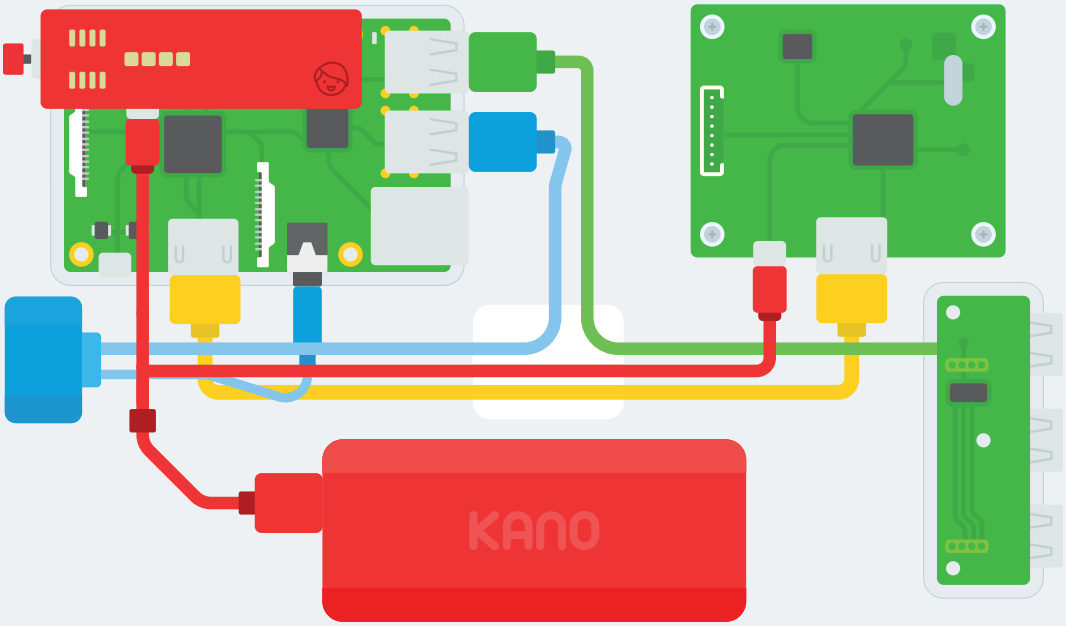
...and plug it into the screen's driver board



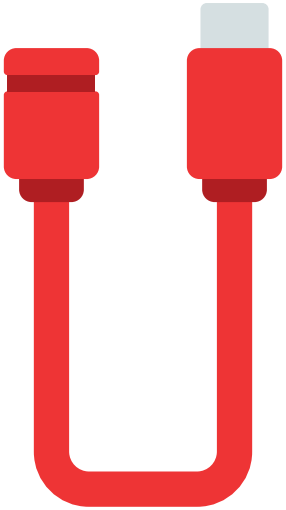
Electricity travels down the cable to power your computer and screen

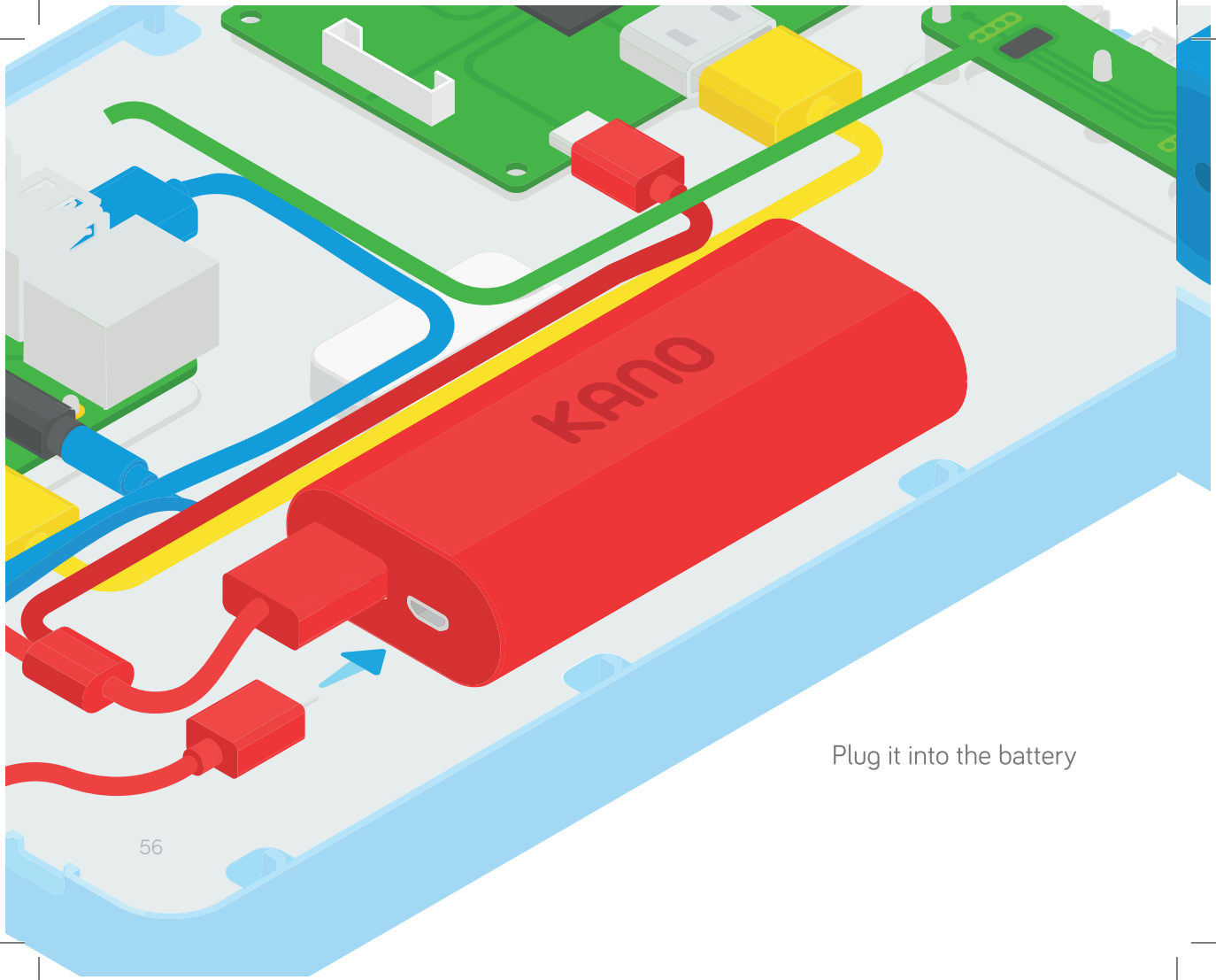


Remember to push the power cable into the channel to keep it tidy

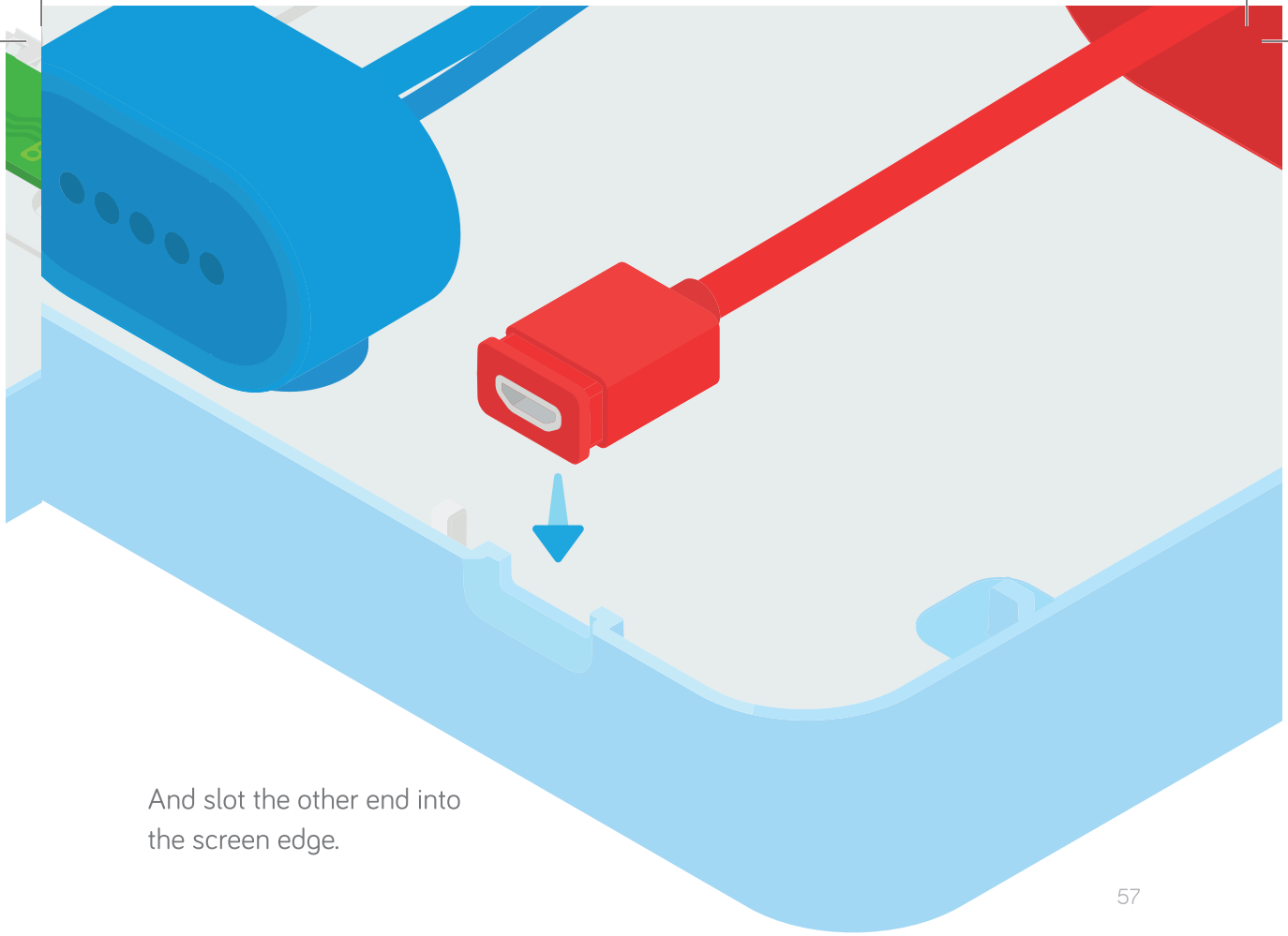


Now grab the small red power cable



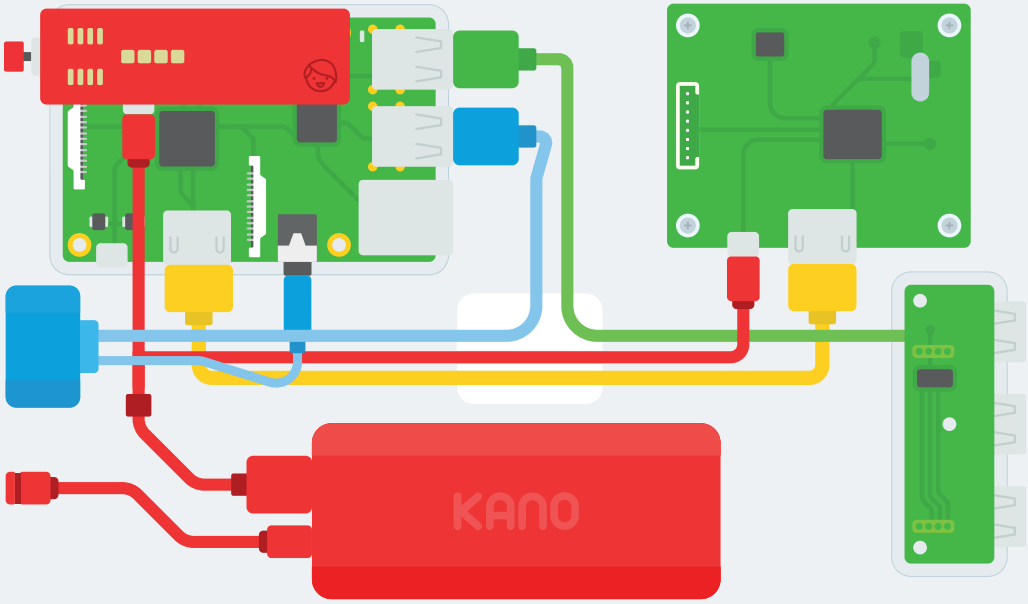


Plug it into the battery

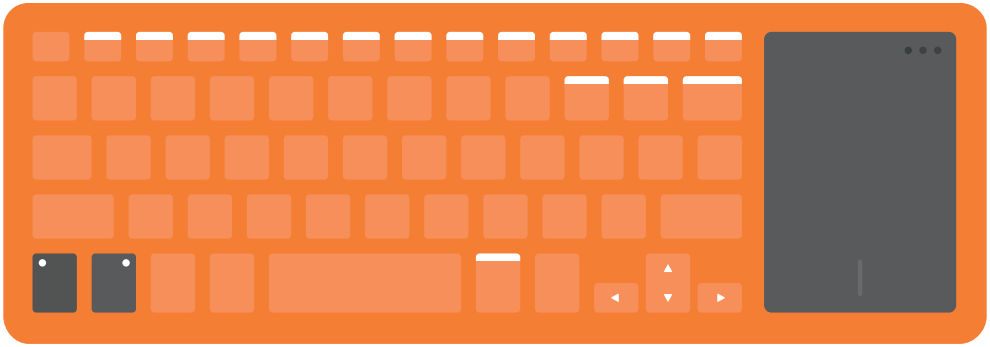


And slot the other end into the screen edge.

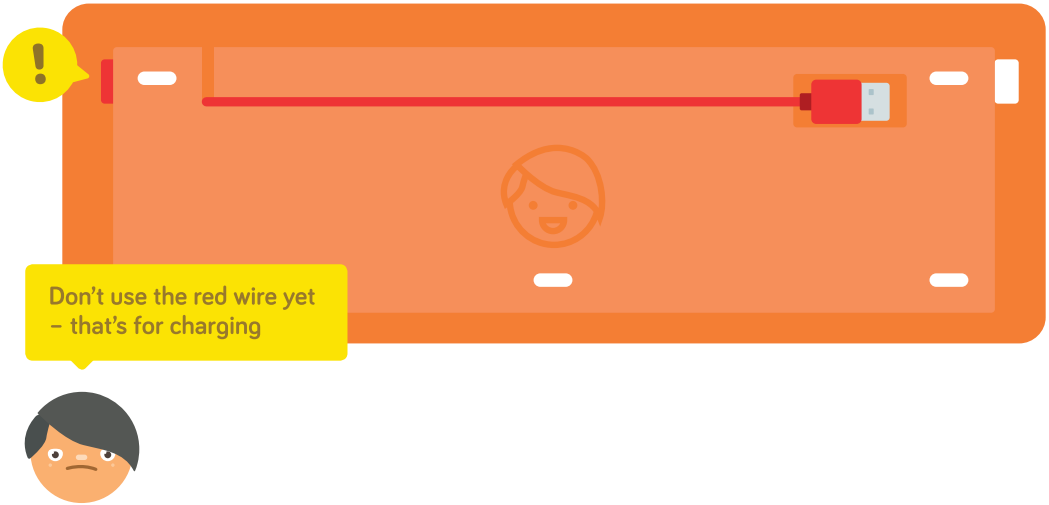
Amazing! Your computer is ready to make sound, images, and connections



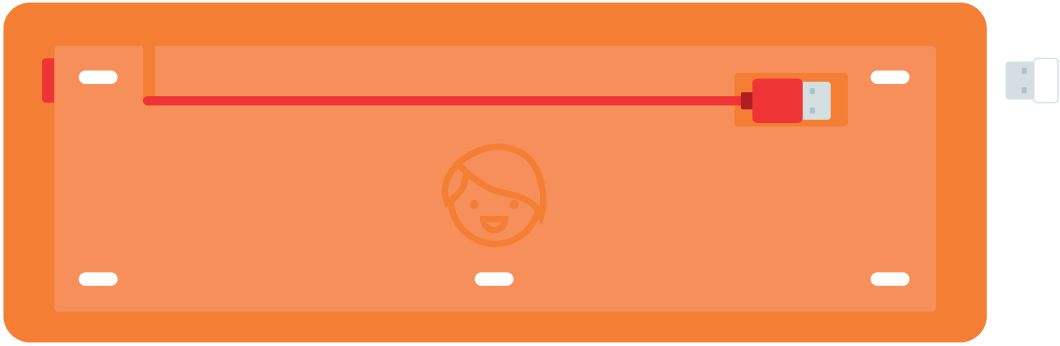
Now you need a way to talk to it. Grab your keyboard!



Pick it up, flip it over, and push the power button

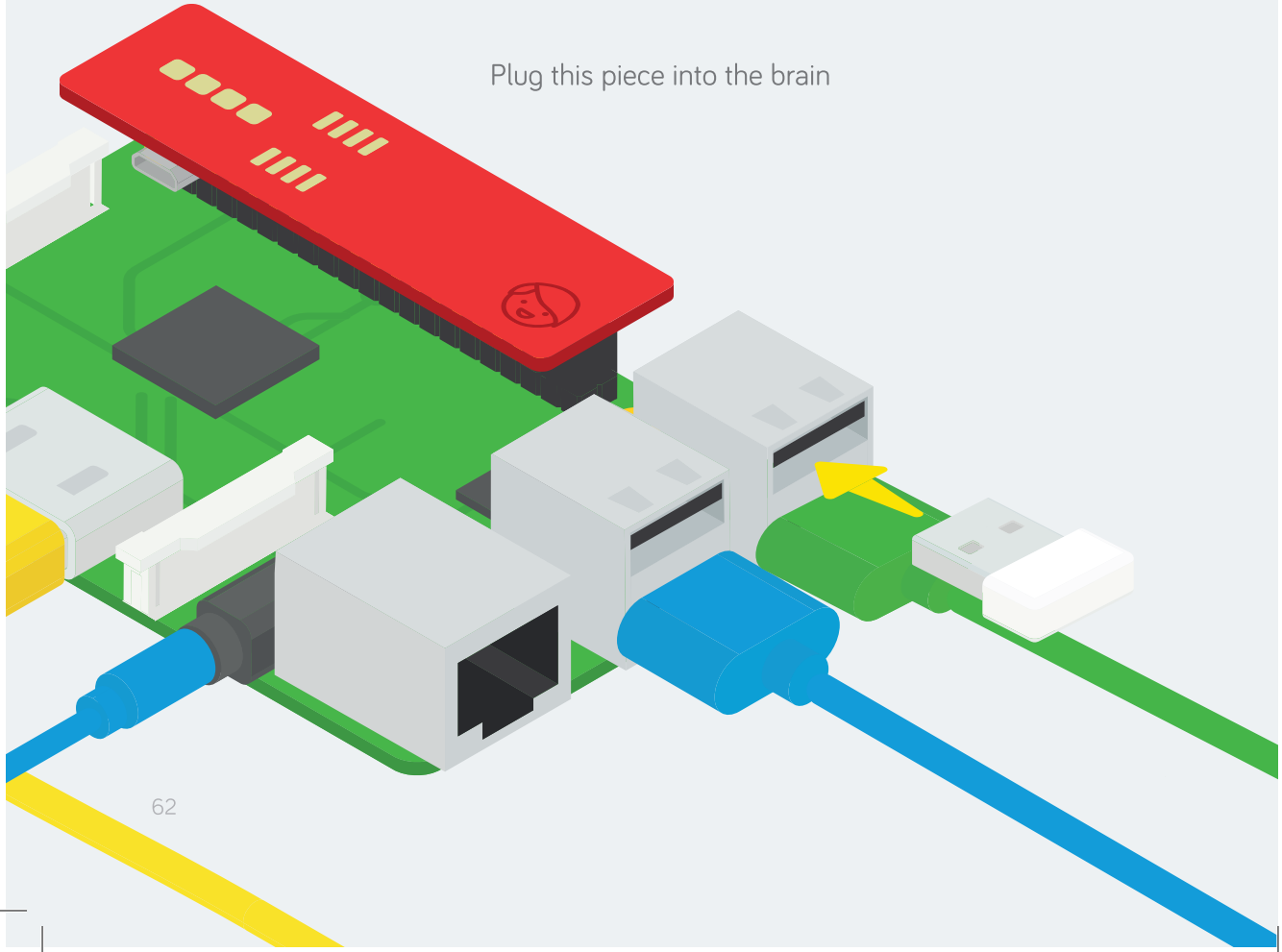


Take out the white piece

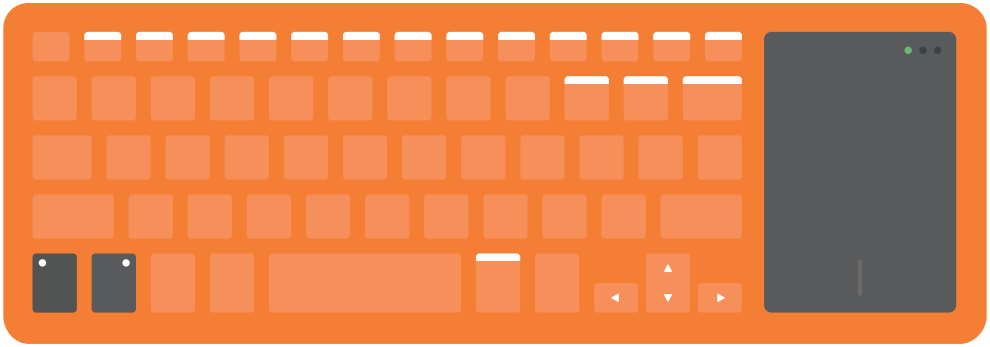


This is a radio antenna!

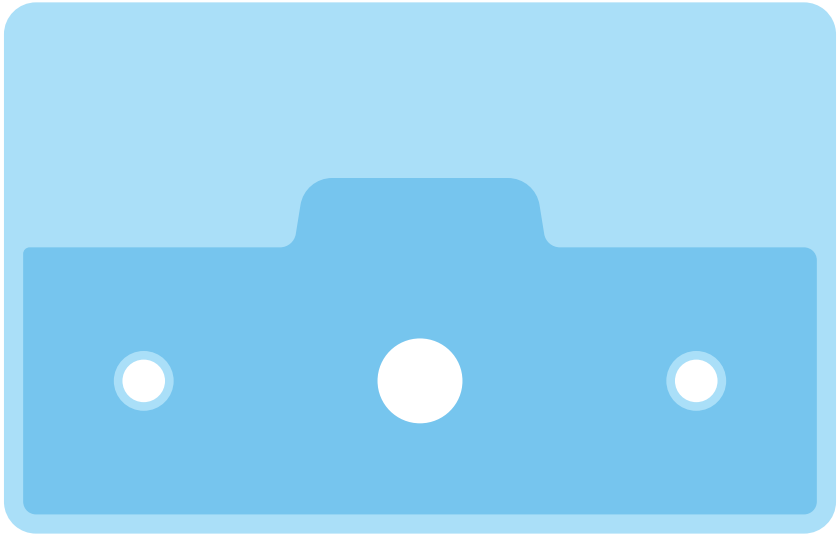
Plug this piece into the brain



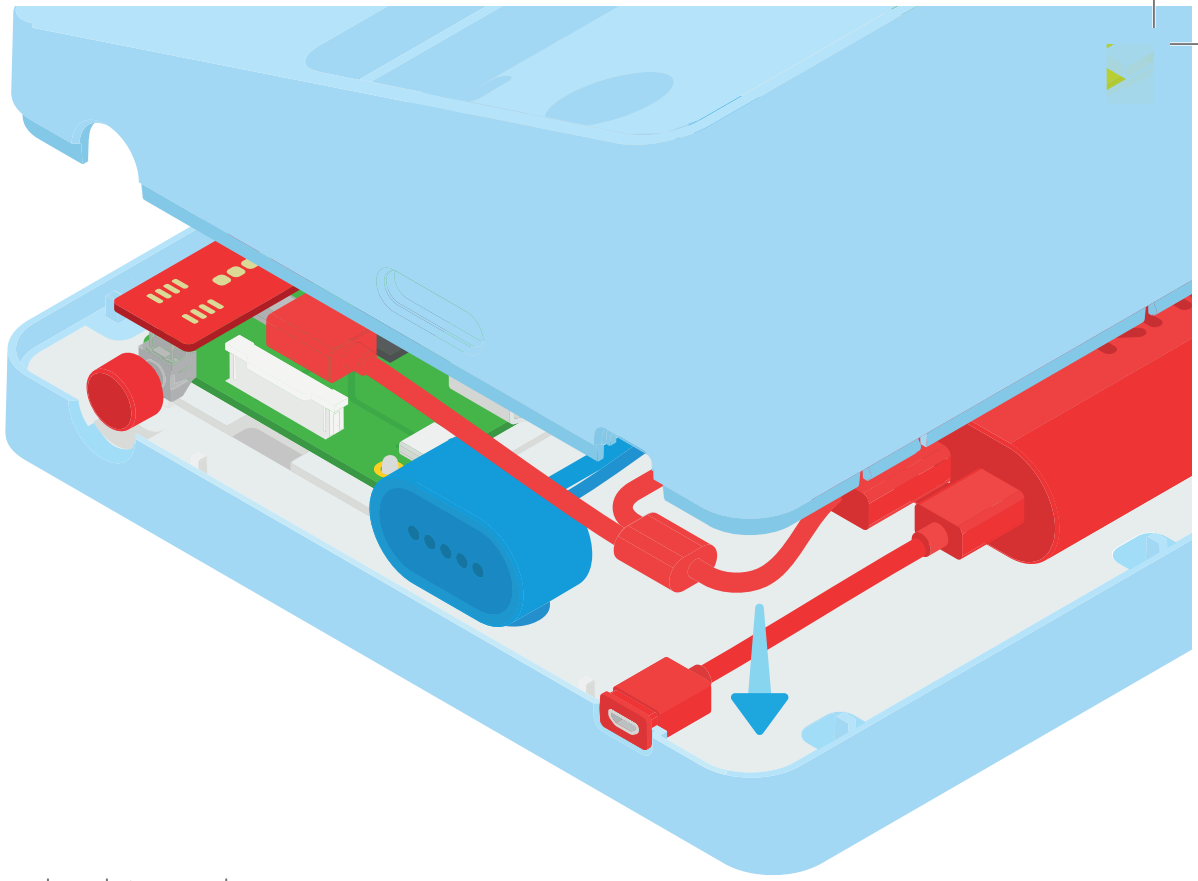
The keyboard and computer are now connected



To keep your computer strong and safe, let's add the case



Grab the screen case...

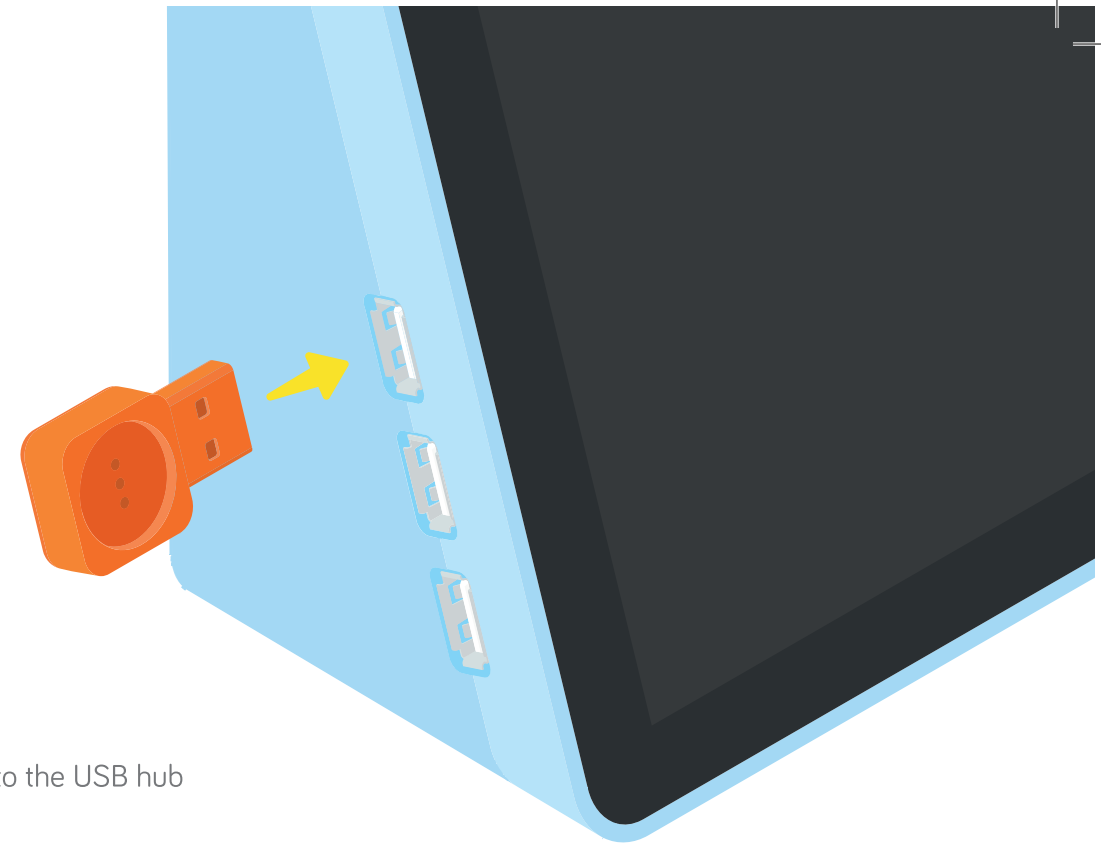


...and push it onto the screen

Now, one final touch: the Sound Sensor

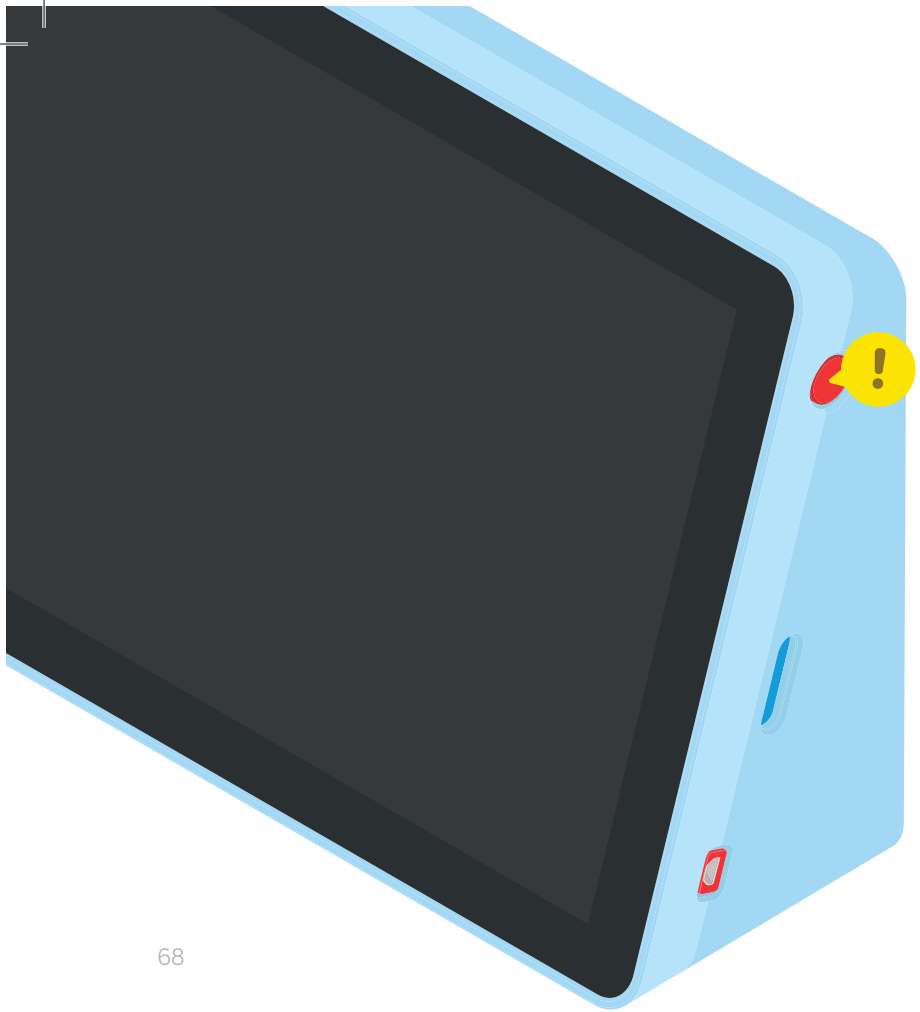


It lets your computer listen to the world around you



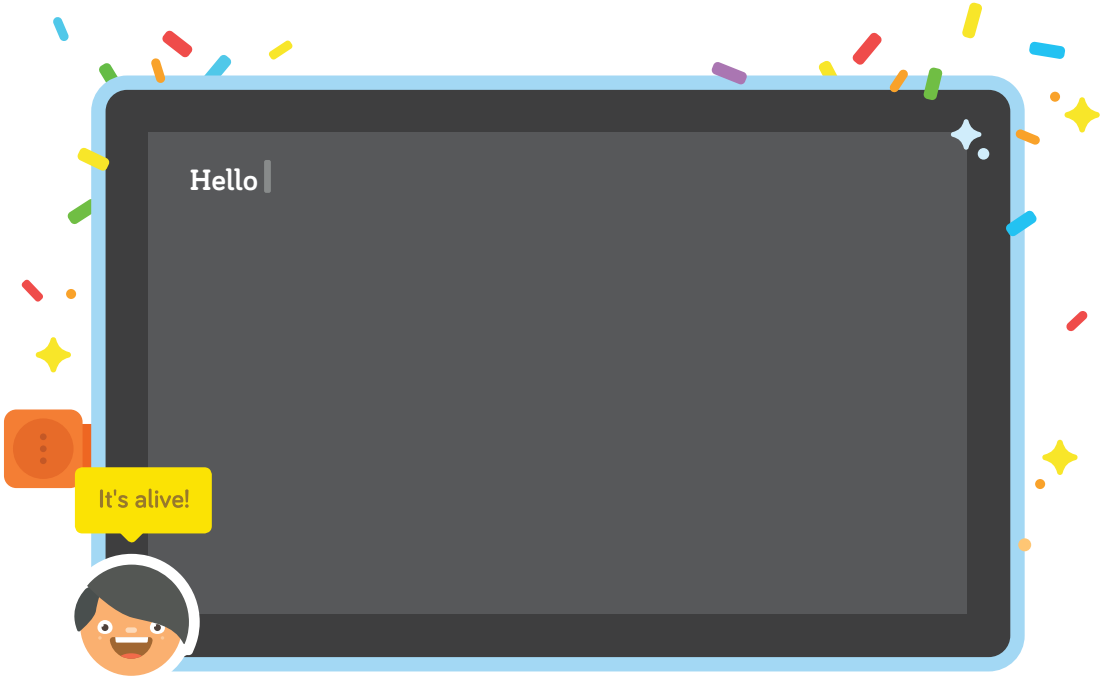
Plug it into the USB hub

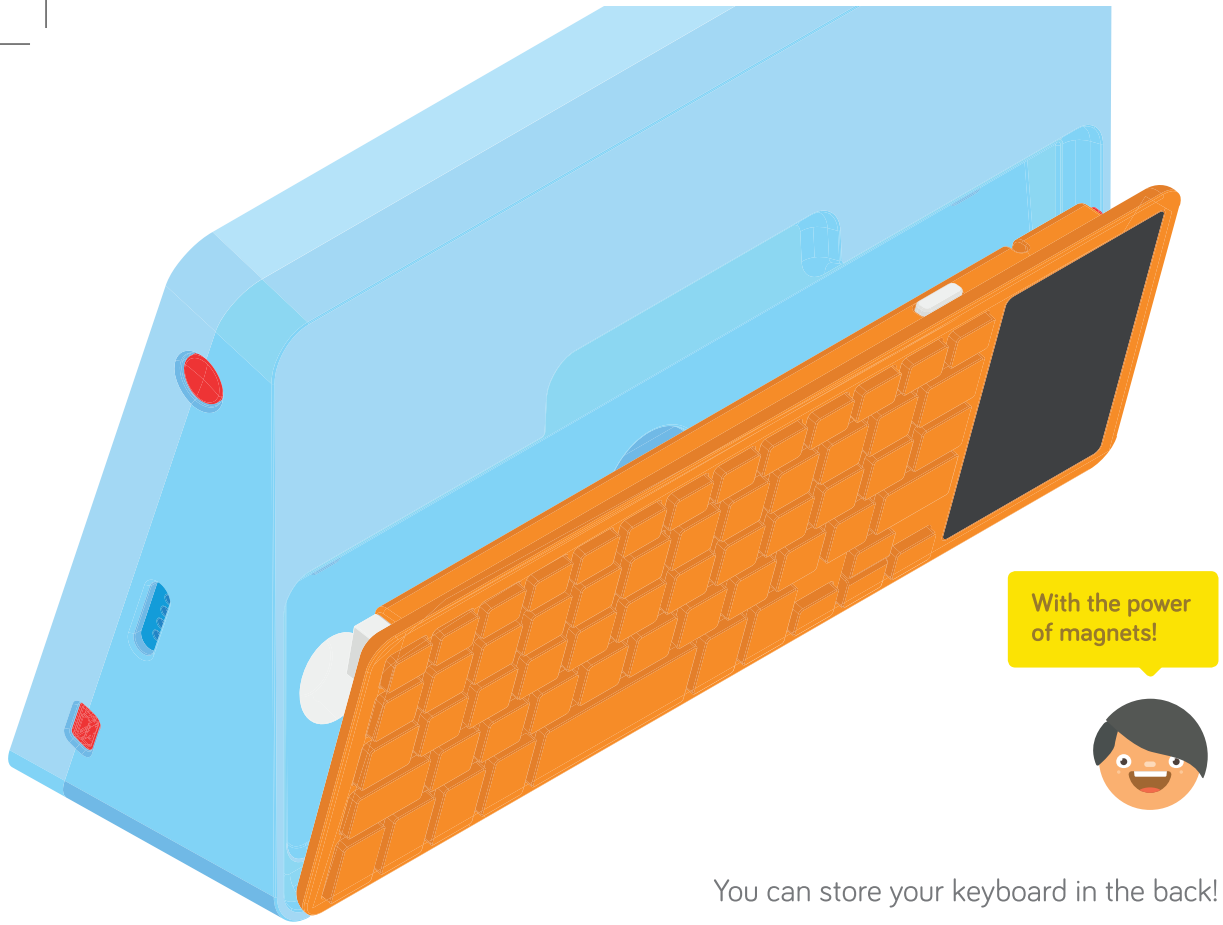
Now you're ready to make
sound-controlled apps, art and games



Hold the power button
for 3 seconds to...

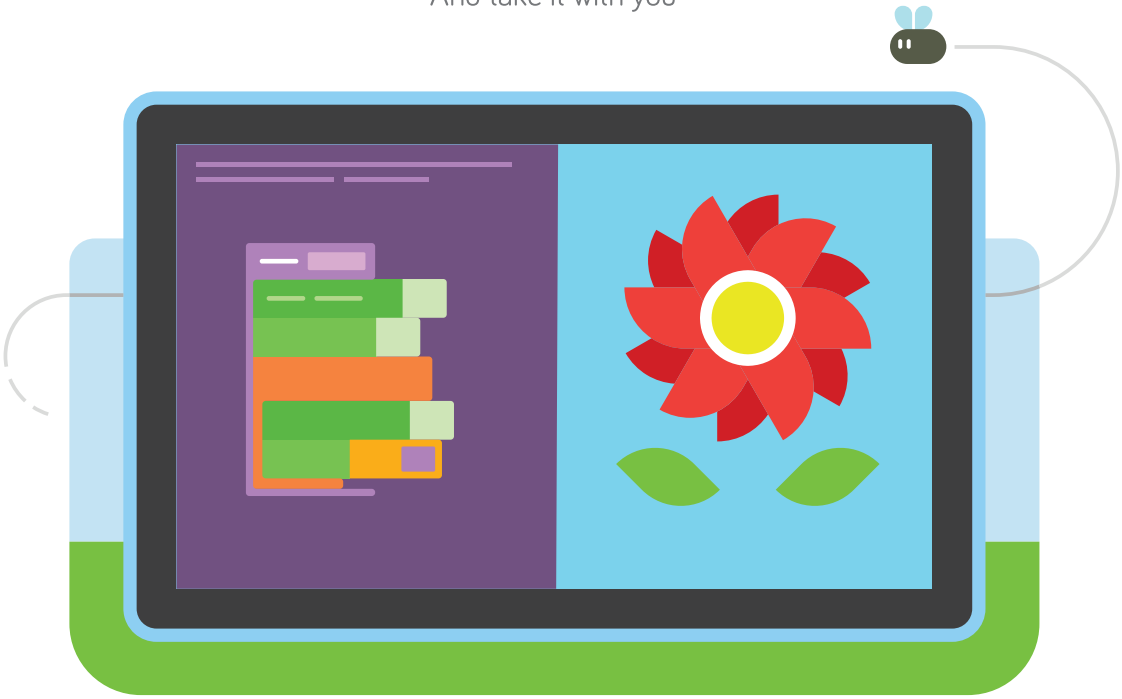
...bring your computer to life!





You can store your keyboard in the back!

And take it with you



The lights on the keyboard tell you how it's feeling



Green, orange, and red mean different things



Green
Successful radio connection



Slow flashes
Turned on, but not connected



Fast flashes
Low on power, time to charge!

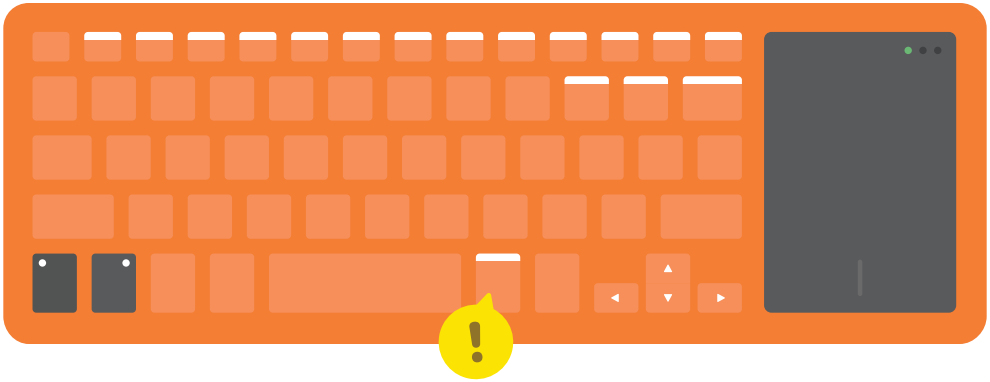


Orange
Caps lock status



Red
Charging

Your keyboard has hidden powers



Activate the white functions by holding [FN]

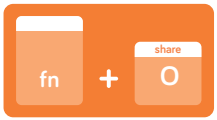
Try these combinations



Run code
Make it happen!



Mouse speed
Medium or fast

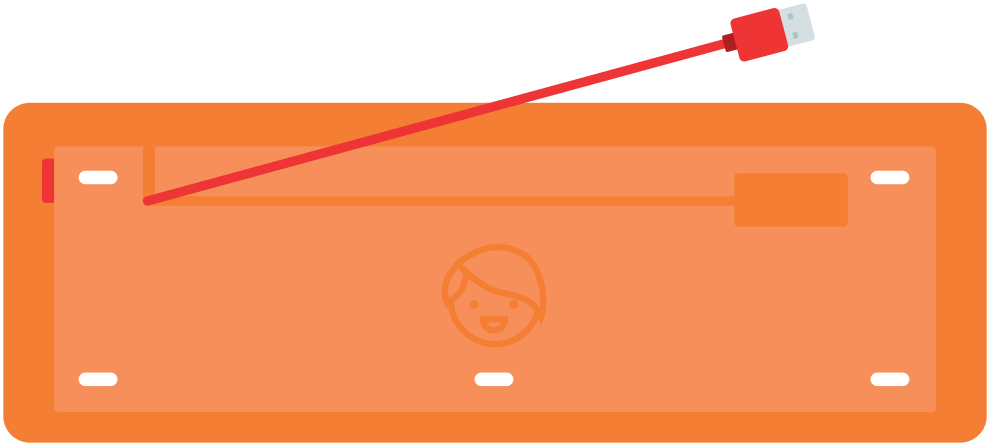


Share creations
Show off to friends



Useful for coding
All of these keys are frequently used when coding, so make sure to learn them

The keyboard needs to be charged from time to time



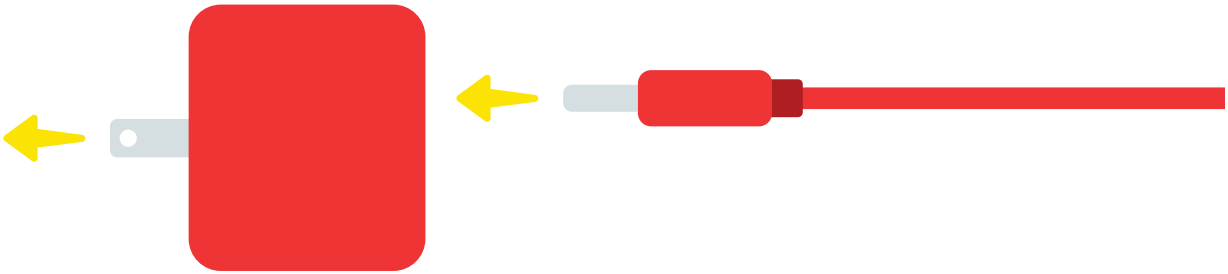
Plug the red cable into the power plug or your computer to charge it

The same for your computer's battery

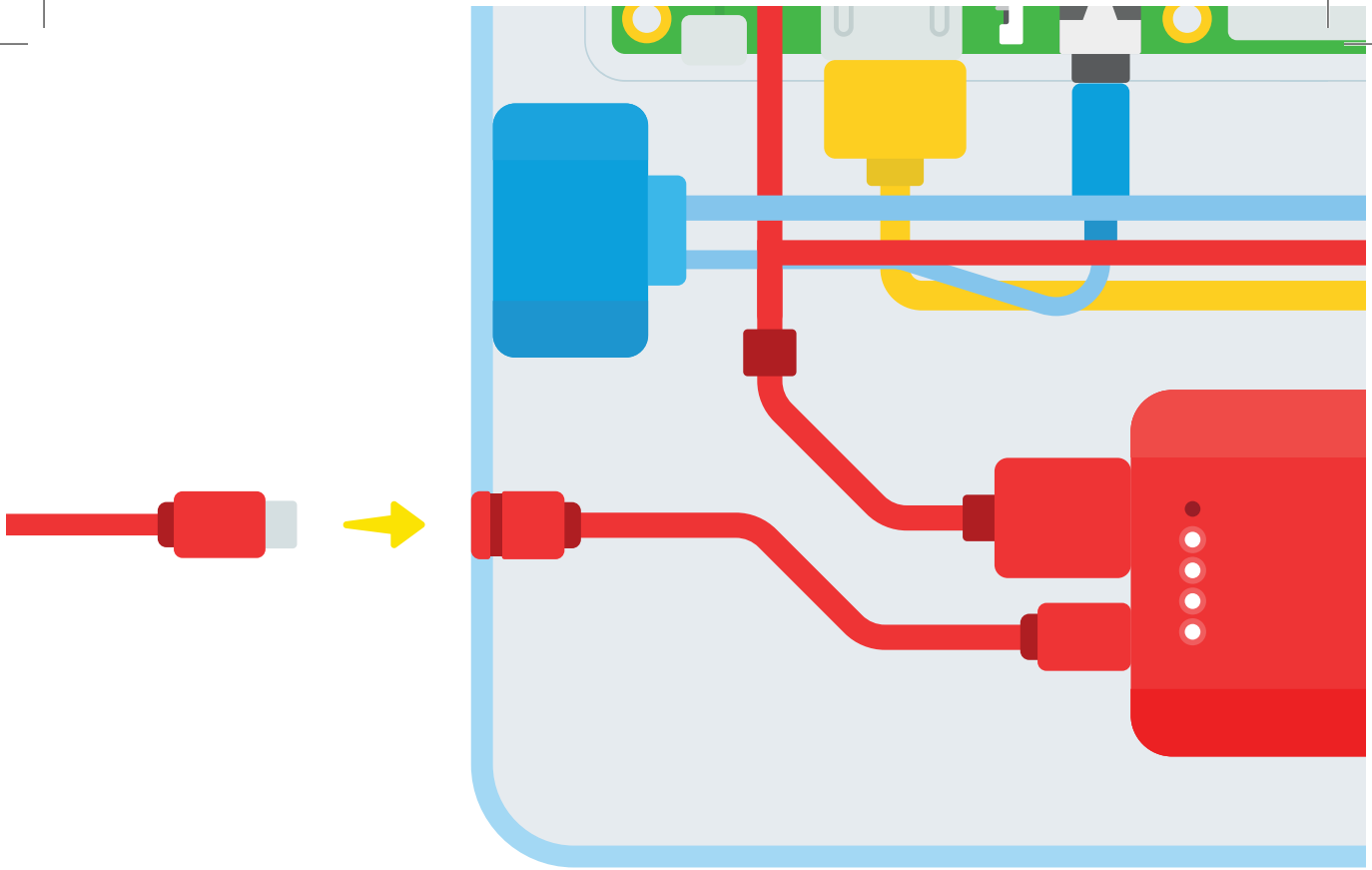


Use your power cable and plug to charge the battery

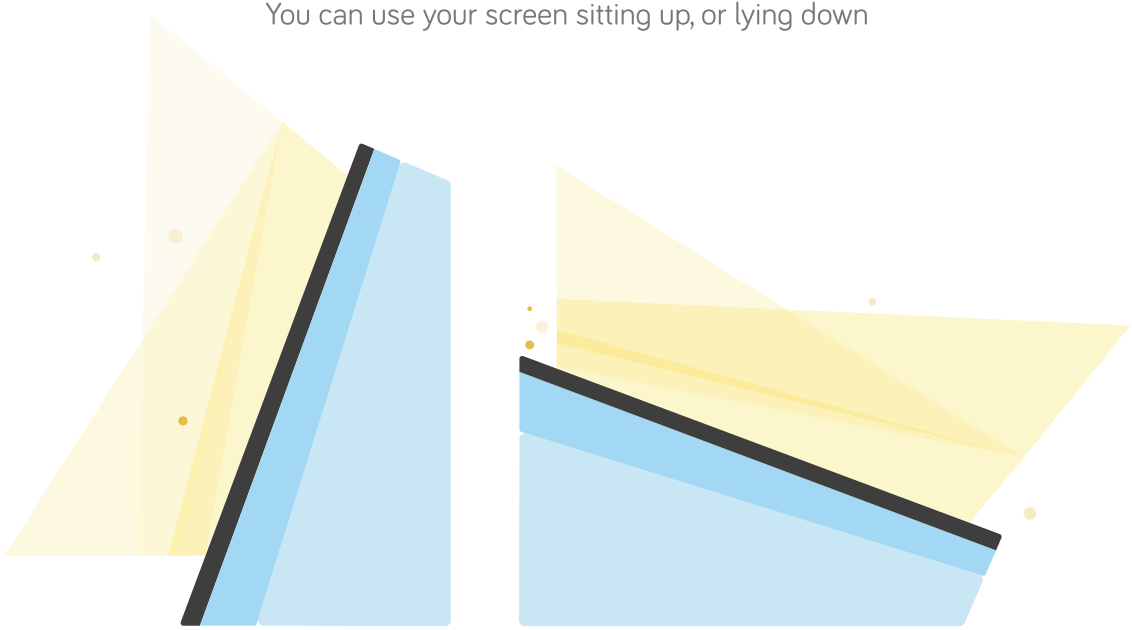
Plug the small end of the red cable into the computer...



...and the big end into the the power plug, and then a wall socket



You can use your screen sitting up, or lying down



Click on settings ( ) to to flip the display

Need help? 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
For tutorials, films
and fun stuff



/kanocomputing
Talk to us and get
the latest news



@teamkano
Send us your pics
and questions



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Anyone Can Make ™

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