pi-top

GETTING STARTED

BE INSPIRED

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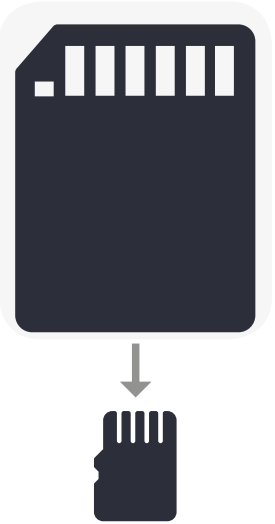
>Discover a new universe



Remove your micro SD card

>Hello world_

Welcome to the exciting world of coding and electronics; this is where your journey as an inventor starts. We'll start by building your very own laptop, which you can use to build circuits and code all sorts of awesome inventions.

Use **pi-top**CODER to create exciting creations such as a smart robot or musical instrument, or to explore the alien world of CEED**universe**.

The "Getting started" booklet is the first step to discovering this new universe, so let's get started!

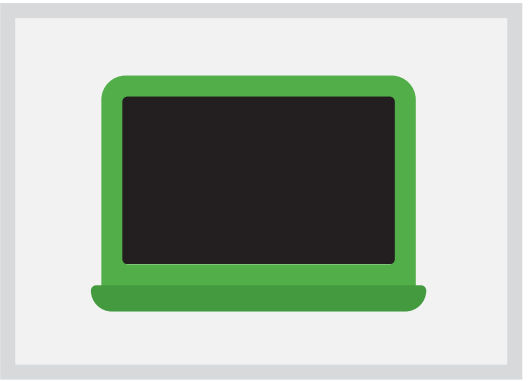
pi-top

pi-top's Journey

pi-top is an invention as well; here is the invention process.

Concept Drawing

Every great invention starts with a drawing on what it will do. When you invent, sometimes drawing will help you too.

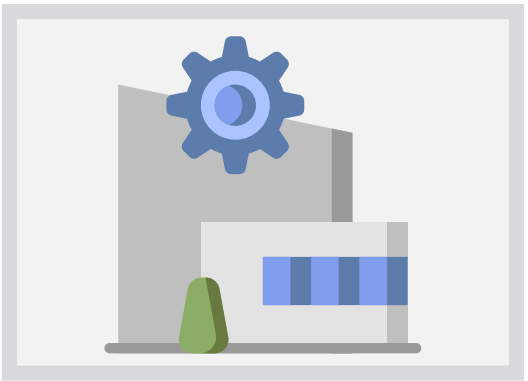


Prototyping

We worked hard on building a prototype to see if our idea would actually work. Sometimes it won't, at first, but that's ok; you have to keep trying until it does!

Testing

It's important to test and make sure that your invention works the way you want it to.



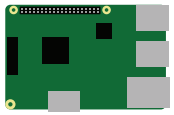
Manufacturing

Once we've produced it, you are ready to start building this **pi-top.** Using this **pi-top** you can make your own inventions and share them with your friends.

What's in the box

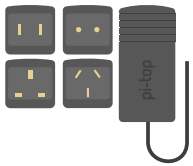
pi-top

pi-top is a new type of laptop made for young inventors. The keyboard slides out to reveal a built-in workspace, where you can create your own projects!



Raspberry Pi 3

This is the brain of your **pi-top**. It allows you to code and build your projects, watch videos, browse the web and much more. Usually, it is sold separately.

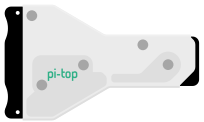


Power Adapter & 4x Plug Heads

This takes mains power, which is high voltage, and reduces it down to make it usable for the **pi-top**. The different plug heads let you use your **pi-top** in different countries.

pi-top Multi-tool

It is both an SD card removal tool and a screwdriver for your **pi-top** internals. Very Handy!

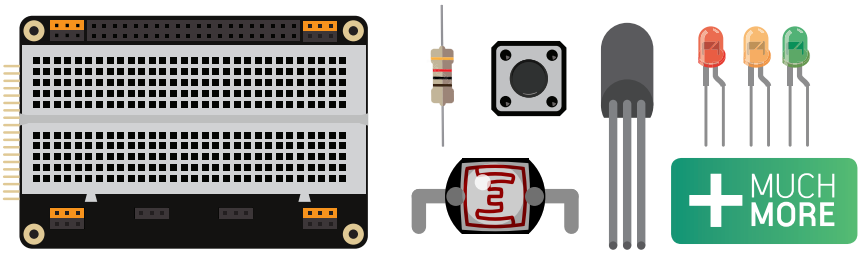


Cooling Bridge

When the **pi-top** starts to work very hard, it produces heat and this heatsink cools it down. This also allows your projects to 'talk' with **pi-top's** brain so that you can build your own electronics using the Raspberry Pi and **pi-top** products seamlessly.

SD Card with pi-topOS

This is where the whole operating system lives. Your **pi-top** needs it to know what to display on the screen.



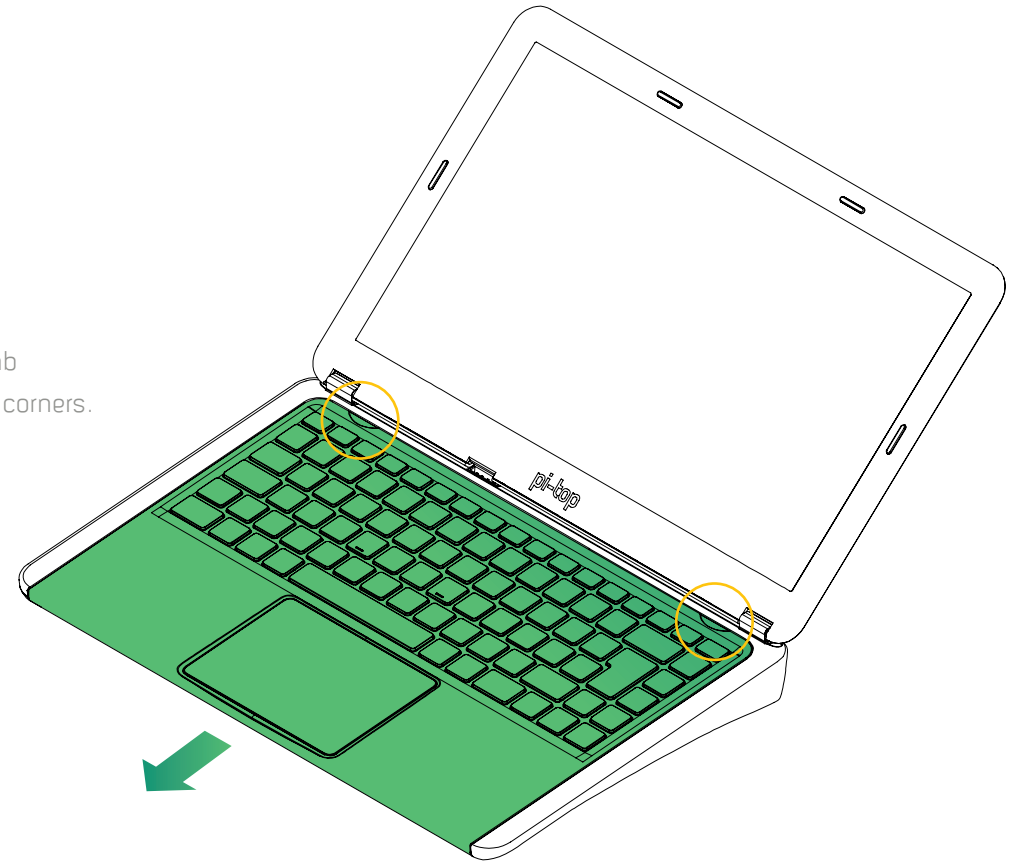
Inventor's Kit

This kit has all the tools you need to make and invent awesome projects!

Building Instructions

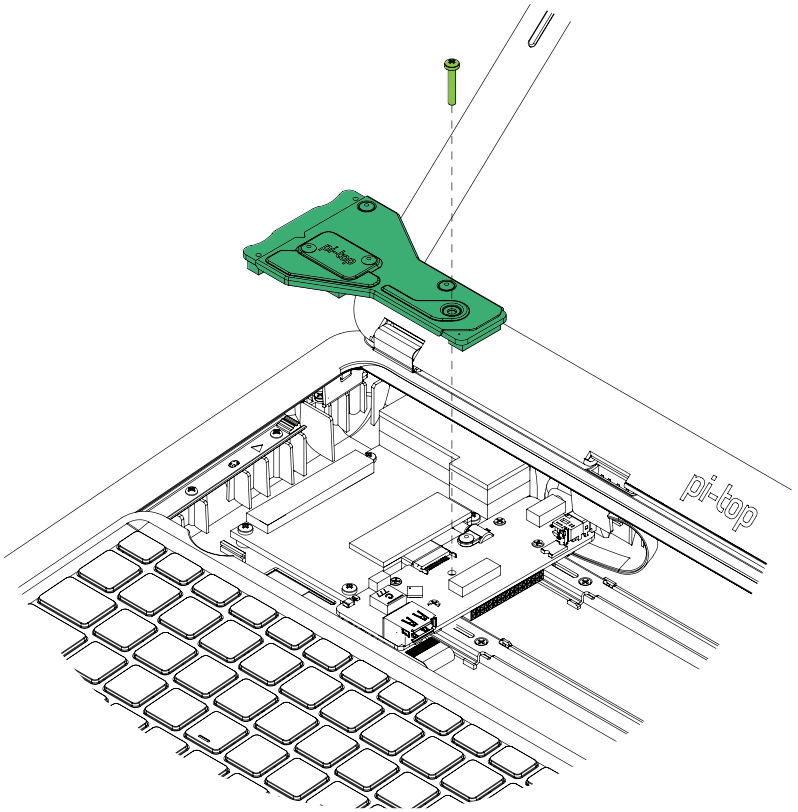
Step 1.

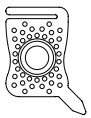
Open the lid. Slide down the keyboard using the two thumb grooves at the top near both corners.



Step 2.

Remove the Cooling Bridge on top of the micro-computer (Raspberry Pi). Use the multi-tool and lift off the Cooling Bridge carefully.

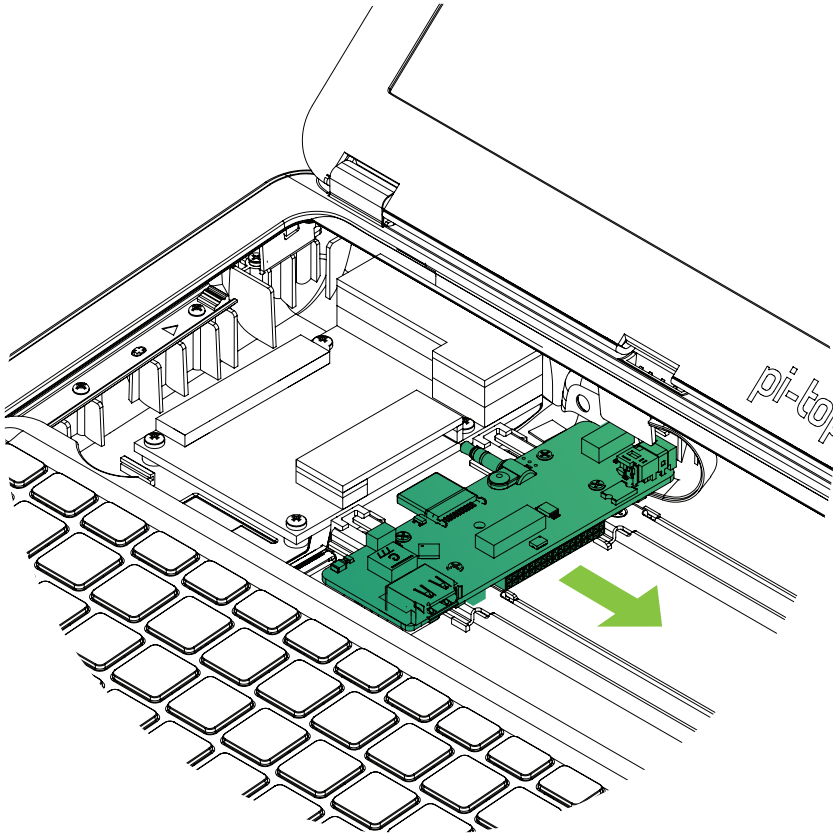




You'll need the **pi-top** Multi-tool for this. You'll find it in the chassis below the Cooling Bridge.

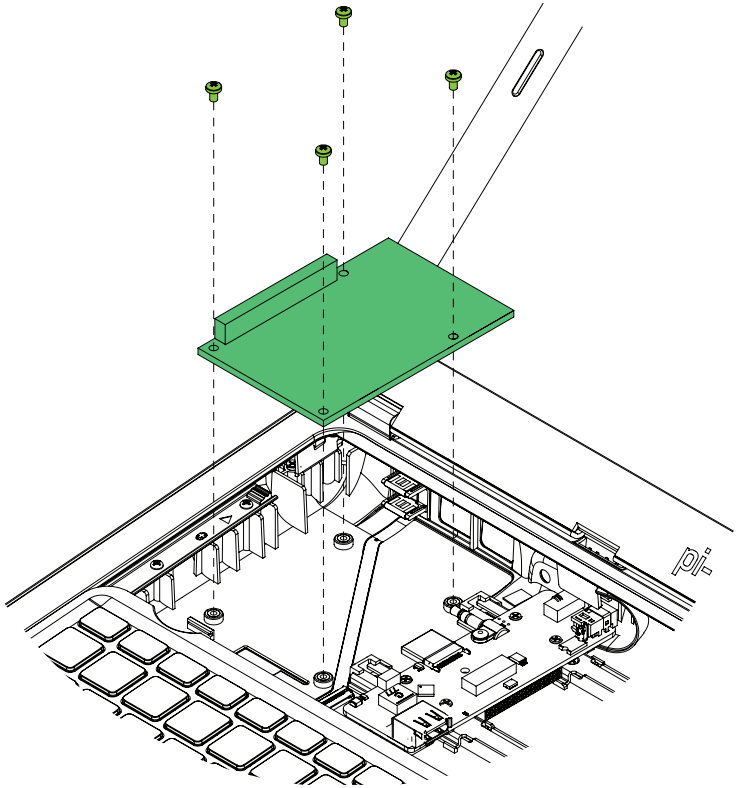
Step 3.

Carefully slide the hub PCB, as shown in green, all the way to the right. Don't push it too hard or too far!



Step 4.

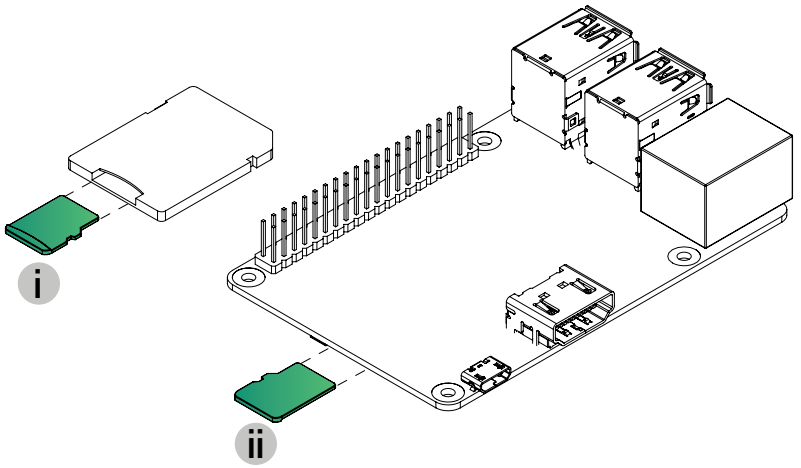
Unscrew the four Raspberry Pi screws from the Raspberry Pi placeholder (made from paper card). Slide the insert towards you and the top edge of the keyboard, as you lift it out.



Step 5.

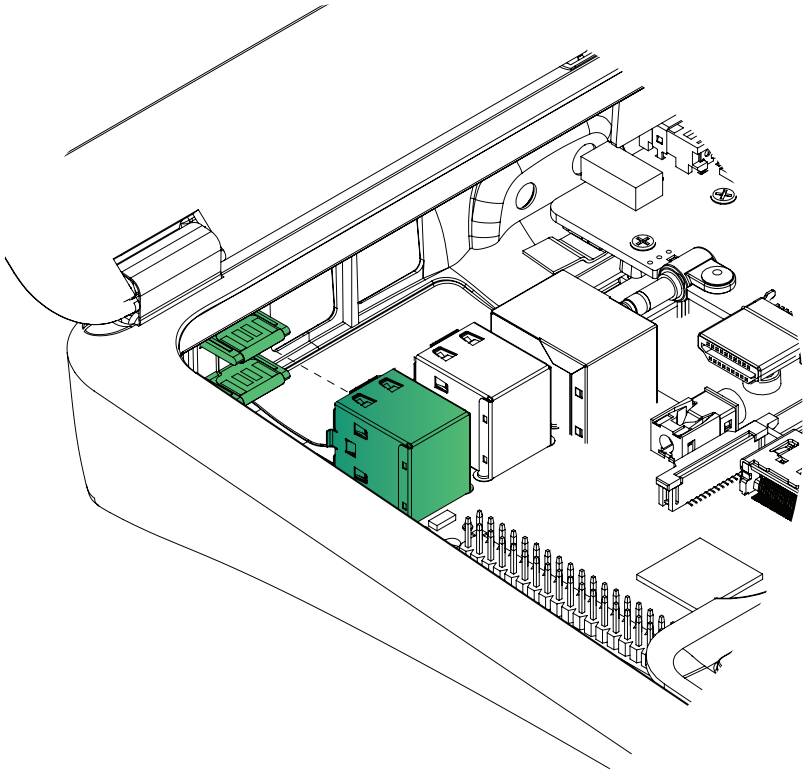
i. Now remove the Micro SD card from the SD card adapter as shown.

ii. Insert the micro SD card into your Raspberry Pi as shown with the correct orientation. It should easily slide in; don't use too much force.



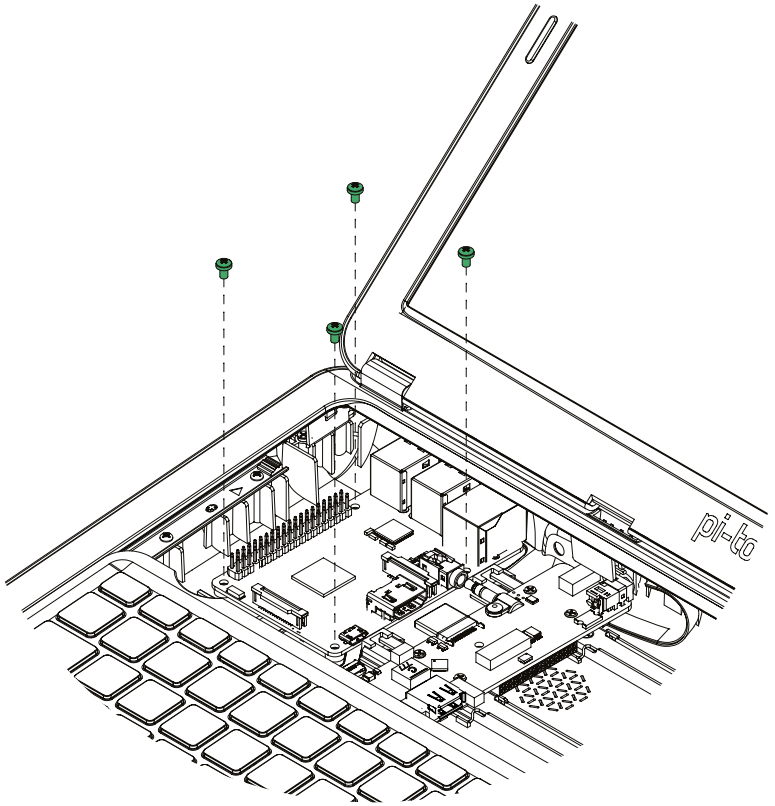
Step 6.

Carefully slide the left-hand USB ports into the USB Flexi-plug at the rear of the laptop.



Step 7.

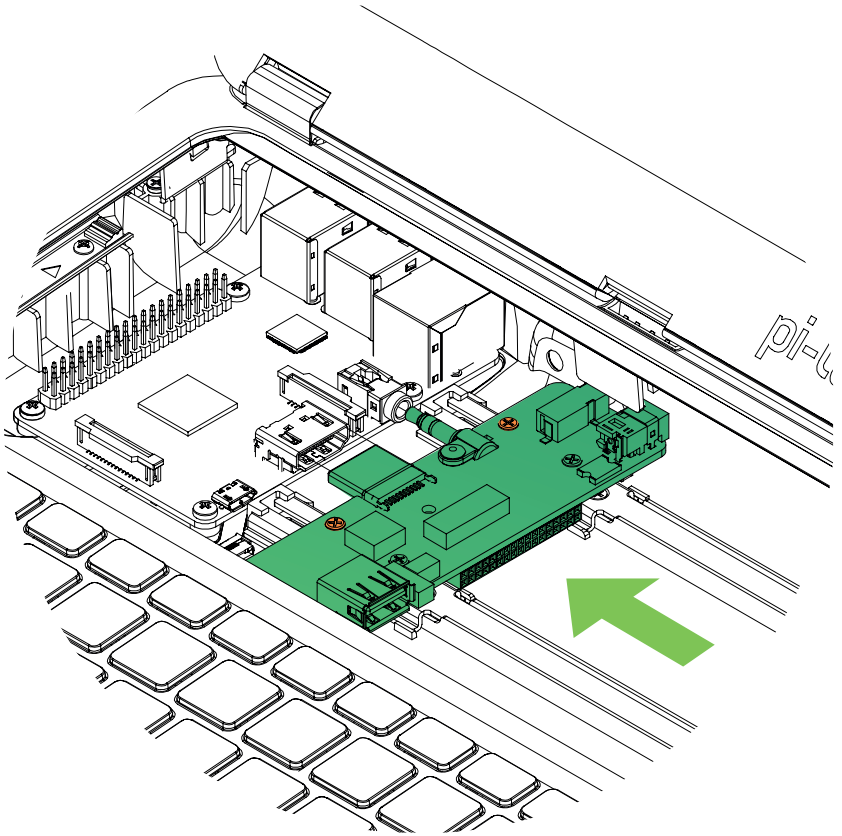
Now using the multi-tool screw in the Raspberry Pi with the four screws from Step 4. Be careful to not over-tighten the screws.



Step 8.

Now carefully slide the hub to the left. Make sure to position the HDMI and audio jack in the associated ports on the Raspberry Pi.

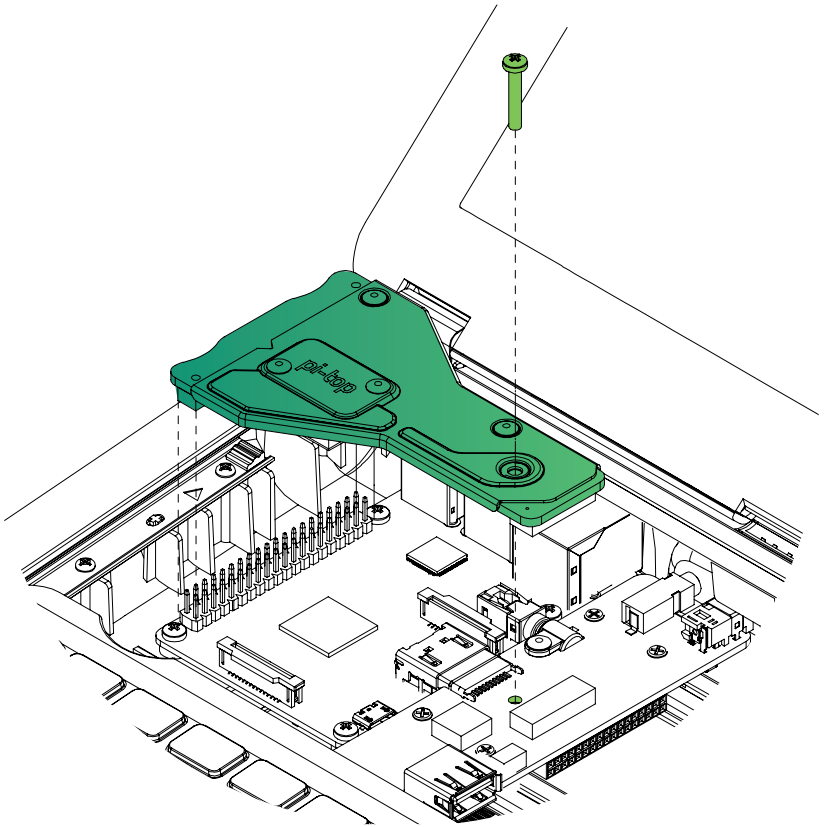
If the hub doesn't align properly with the Raspberry Pi ports, simply turn the adjustment screws (highlighted in red) to raise or lower the HDMI connector. Turning clockwise will lower it, anti-clockwise will raise it.



Step 9.

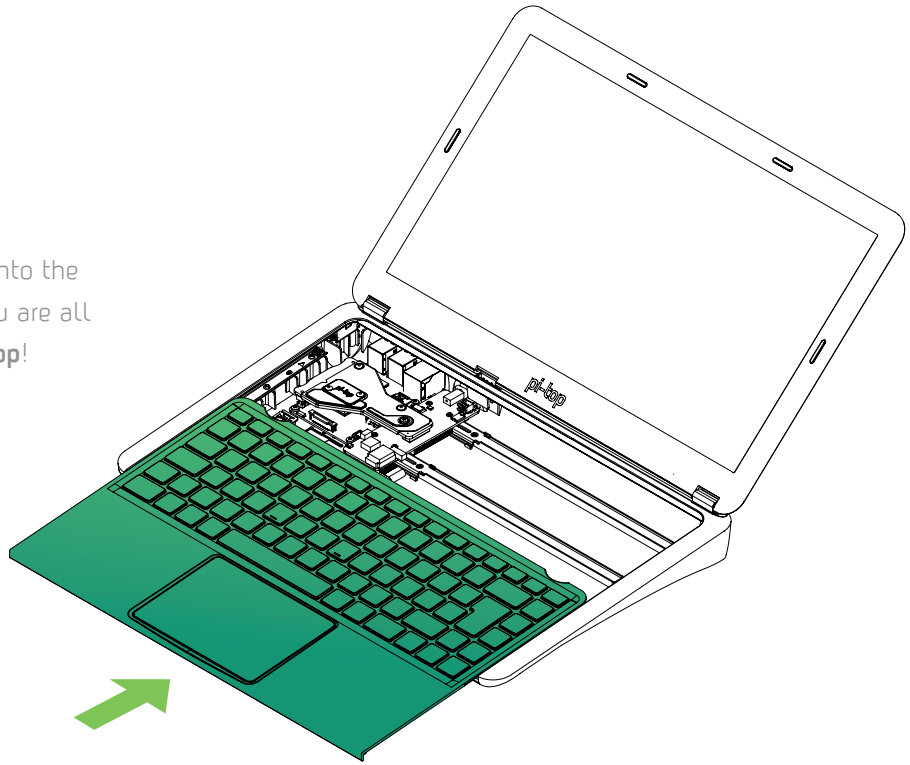
Place the Cooling Bridge onto the Raspberry Pi GPIO pins, taking care to align correctly!

Push down gently on the right side of the Cooling Bridge to pop it into the **pi-top** hub. Use the multi-tool to tighten the Cooling Bridge in place with the screw removed in Step 2. Tighten it just enough so that the cooling bridge doesn't move or shake.



Step 10.

Slide up the keyboard into the closed position and you are all done building your **pi-top**!



Step 11.

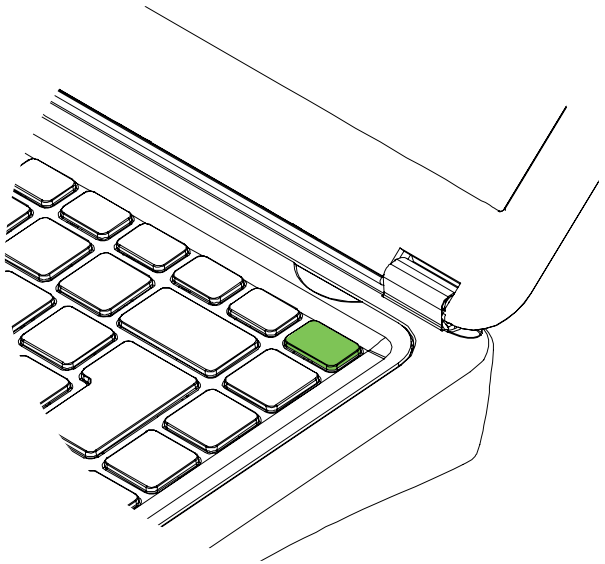
You have just built your **pi-top**.
Take a step back and admire your creation!

Well done, it is now time to start building your own inventions!

Step 12.

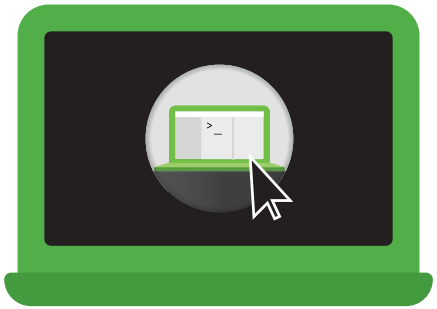
To switch on your **pi-top** and start your journey as a creator, press the power button highlighted on the keyboard in the upper right hand corner.

A world of discovery awaits you!



Your First Invention

Now that you have built your **pi-top**, let's get to building your first creation!

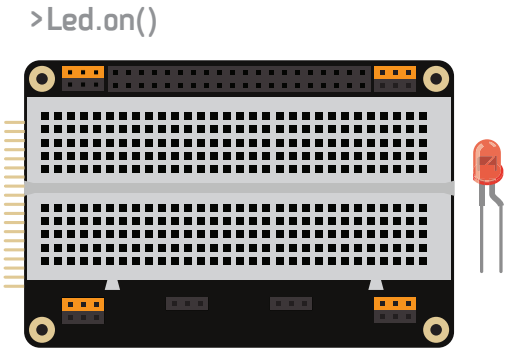


Boot up pi-topOS

Make sure the Raspberry Pi has the **pi-top**OS SD card inserted. Boot up the **pi-top** with the power button on the keyboard.

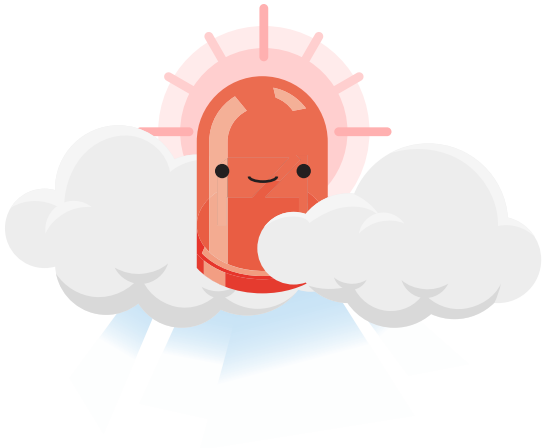
Launch pi-topCODER & select "Let there be light!"

Launch **pi-top**CODER and search for "Let there be light", click on the project and **click LAUNCH to begin.**



Build circuit & code LED

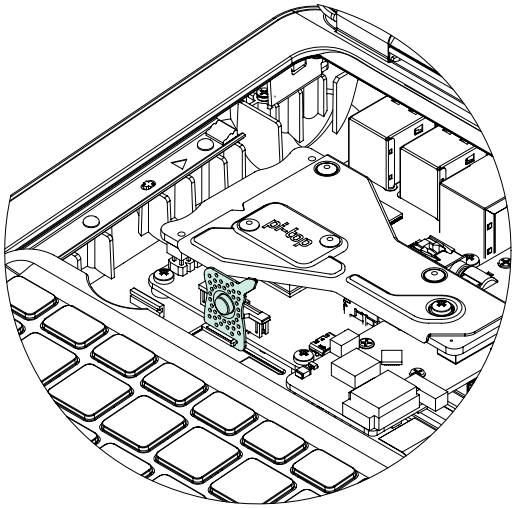
Follow the step by step instructions in **pi-top**CODER to build and code your circuit.



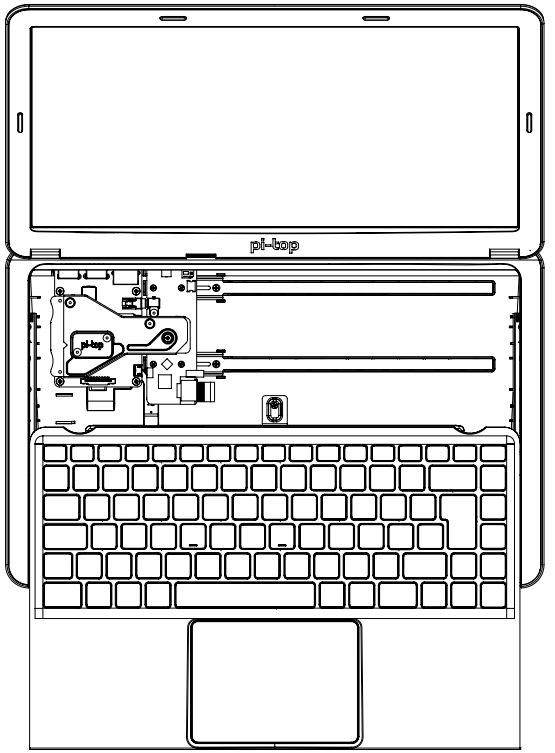
Hooray! Your first creation!

Congratulations! You are well on your way to building and coding your first circuit. Check out the Inventor Guide for many more projects!

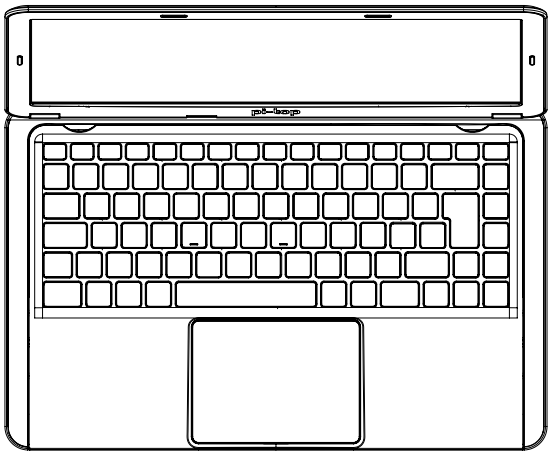
Hardware Pro-tips



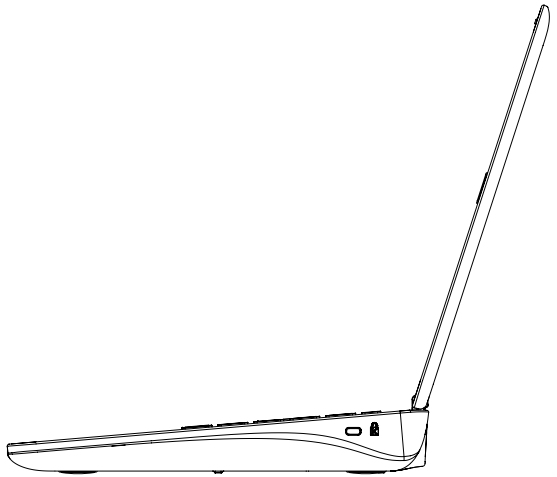
You can use the multi-tool provided to remove your SD card from the Raspberry Pi 3.



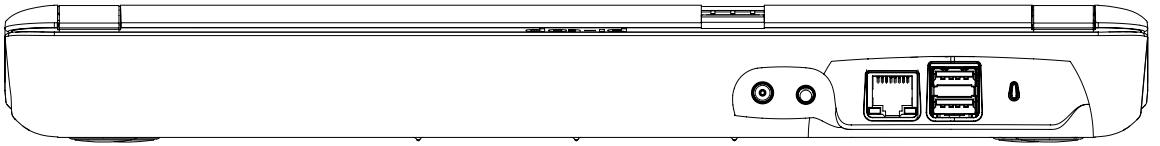
Slide the keyboard open to access the magnetic Modular Rail and the internal USB port.



Keyboard closed



Kensington security slot



You can find (From left to right) the Power Adapter port, 3.5mm Audio Jack, Ethernet port, 2 USB ports, and a power on LED on the back of the device.

pi-top
Inventor's Kit

Every great piece of technology that we use today was invented by someone. Whether we're talking about the wheel or the smartphone, everyone had to start somewhere. Like Charles Babbage and Ada Lovelace inventing the first computer, the Inventor's Kit is your first step into becoming a digital maker and inventor.

Famous Inventors

Nikola Tesla

Alternating Current Electricity

Ada Lovelace

First computing machine

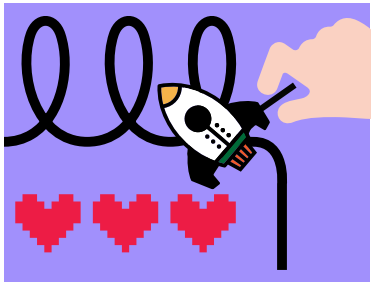
Elon Musk

Tesla cars and SpaceX

Inventor's Journeys

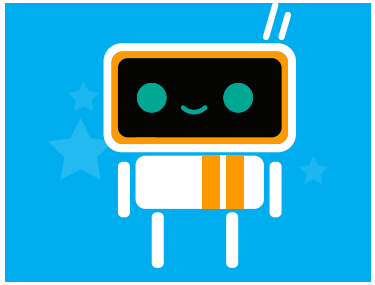
Music Maker

Discover the world of electronic music by creating, remixing and inventing your own musical instruments. Use the inventor kit to alter and shift different sounds until you're ready to party.



Space Race

Make your own rules to the steady hand games with the inventor's kit. Add power-ups, lives, and nerve-racking sounds to beat your friends.

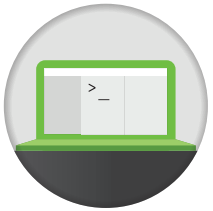


Smart Robot

Design your own digital pet that lights up, beeps or makes sounds in response to noise, light or motion. You're in charge of how your robot responds to different inputs so be creative in your robot code to bring your pet to life.

pi-topOS Overview

Now that your dashboard is up and running you can get to know the **pi-top**OS apps.



pi-topCODER

Whether you're an expert or a beginner, **pi-top**CODER is an exciting and intuitive coding environment which allows you to explore the world of coding and physical computing at your own pace.

See page 32

CEED**universe**

Greetings explorers.
Embark on an epic journey! After crash-landing on a strange new planet, you will explore alien worlds, discover hidden secrets, and advance your knowledge in science and technology along the way.

See page 34

More apps to explore

You can use your **pi-top** like any normal laptop, these are some of the amazing apps you have access to!

Chromium

Google Drive

Libre Office

3D Slash

Python

Gmail

Docs

Slides

Mathematica

Scratch

Youtube

Minecraft

Sheets

Sonic Pi

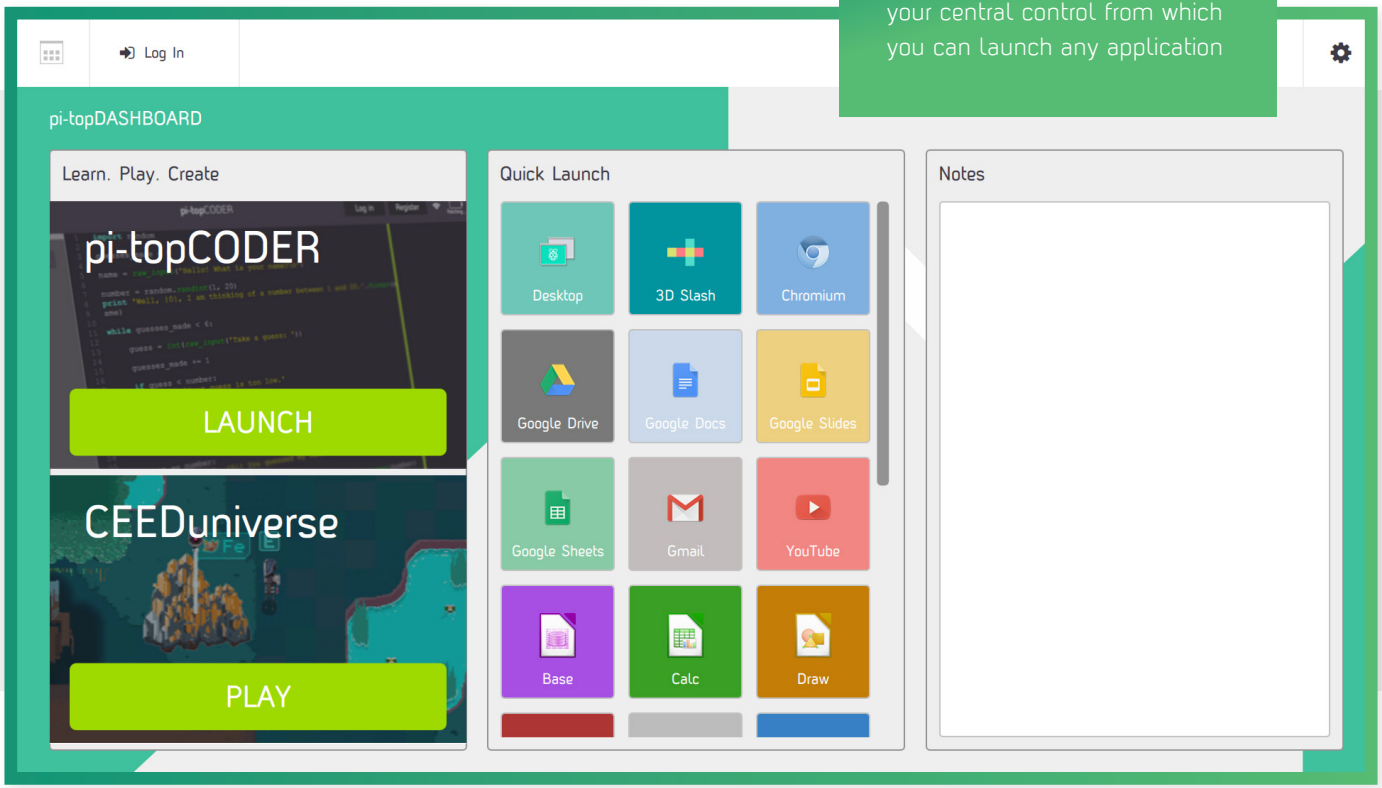
CEED**universe**

Welcome

Welcome to the dashboard. This is your starting-point in **pi-top**OS. It simplifies the way you interact with the Raspberry Pi and will be the main hub for all your activities on your device.

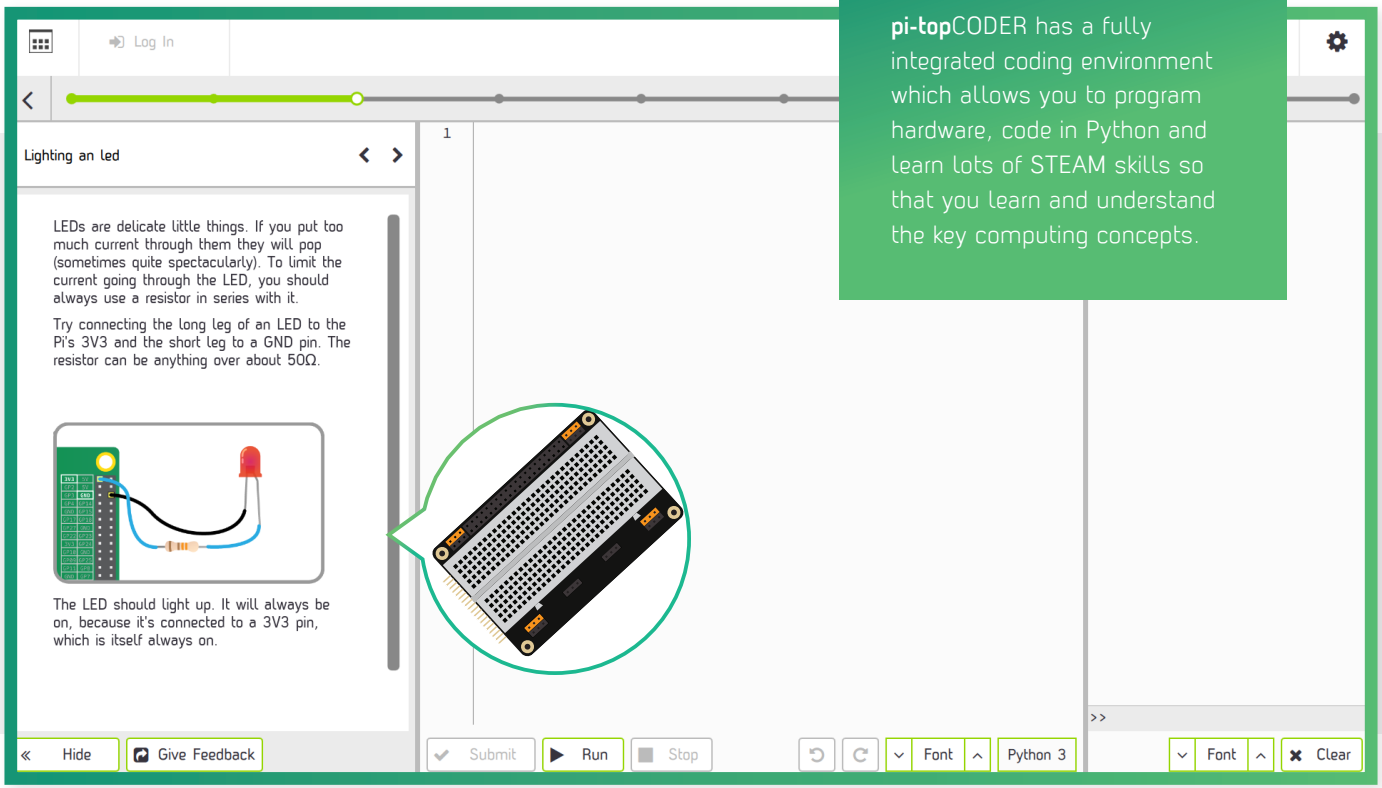
This is also where you can access all other additional apps on **pi-top**OS.

The **pi-top**DASHBOARD acts as your central control from which you can launch any application



pi-topCODER

Access Raspberry Pi resources and projects created by educators from all over the world. You will learn the fundamentals of programming, physical computing and be able to track your progress along the way.

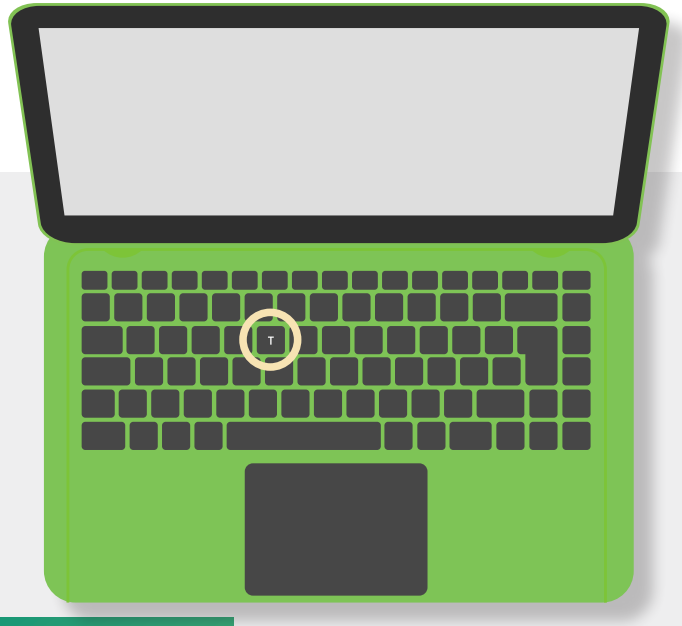


pi-topCODER has a fully integrated coding environment which allows you to program hardware, code in Python and learn lots of STEAM skills so that you learn and understand the key computing concepts.

CEED**universe**

Explore the alien world of CEED**universe** and learn to code Python along your journey.

For the best experience, you may want to use a **pi-top**SPEAKER.

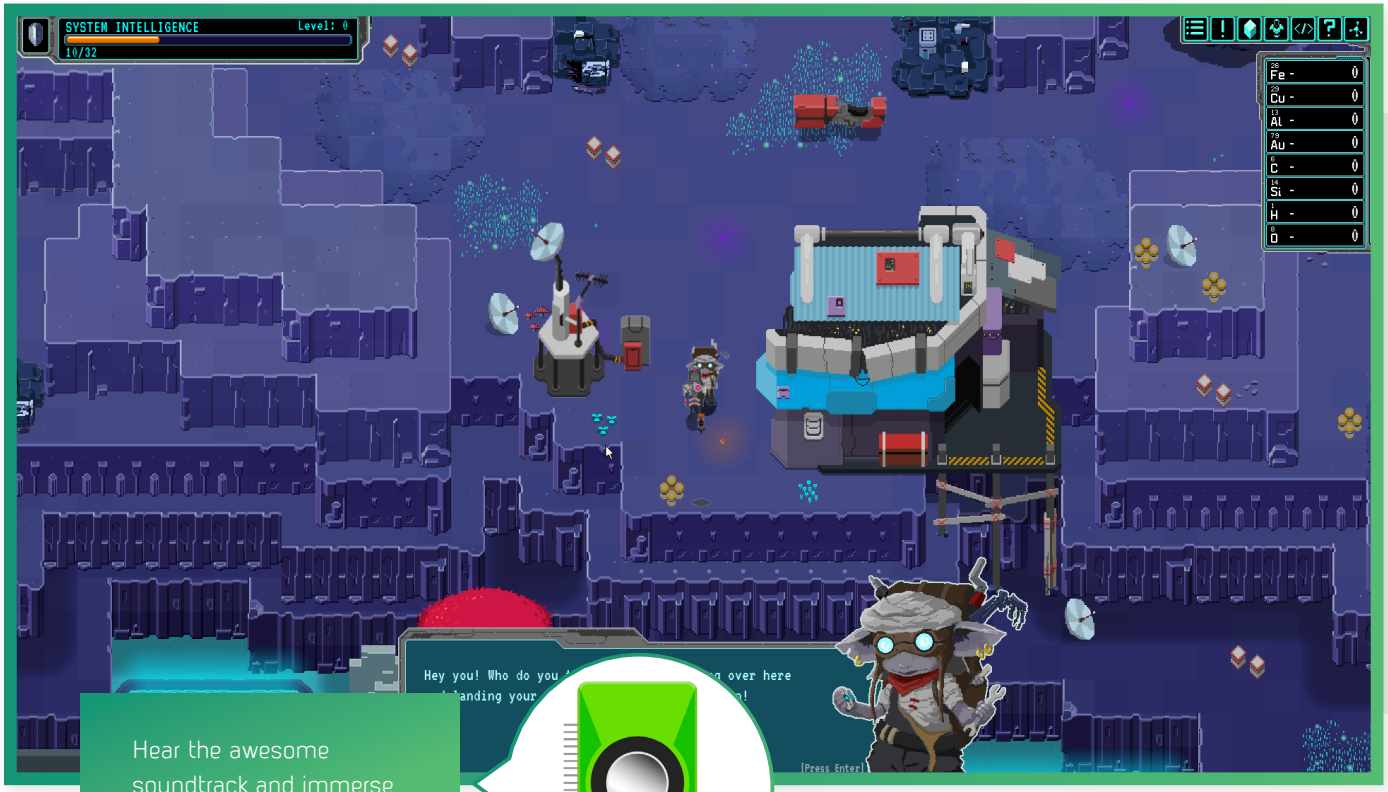


HARDWARE INTEGRATION

You can also build circuits to interact with CEED**universe**. For example; build a button to turn on the flashlight to illuminate dark caves.

MINIGAMES

Learn programming concepts through fun minigames, such as cracking locks with code and piloting nanobots through circuits.



Hear the awesome soundtrack and immerse yourself in CEED**universe**.

Meet fun & interesting characters through your journey!

PEAT

OSWALD

SUSIE

Minecraft

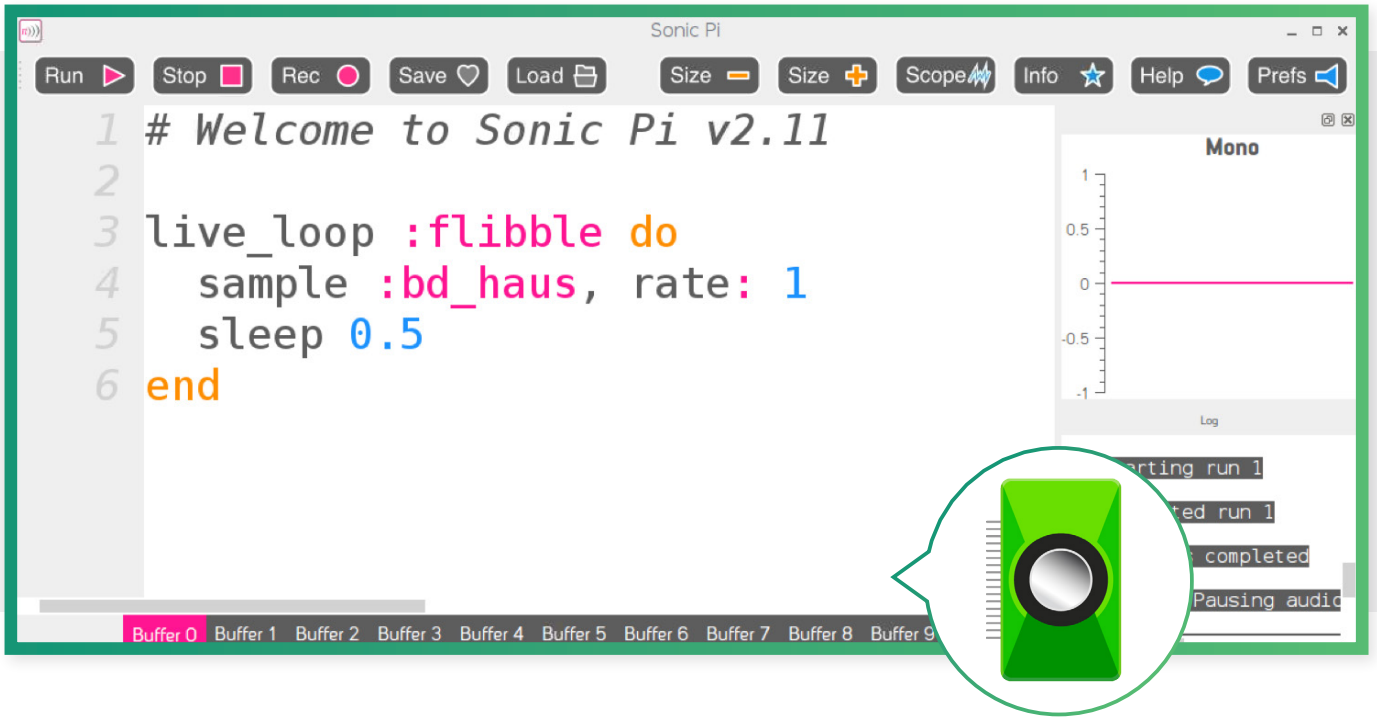
pi-topOS comes with a special version of Minecraft, allowing you to interact with the world using text commands, which lets you build things in the game automatically using Python.

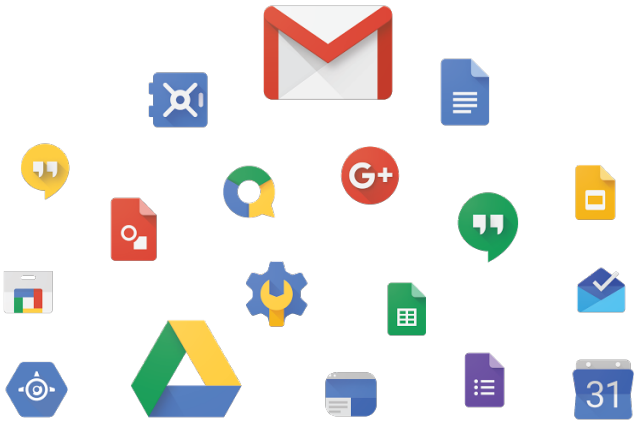
```
import time
import mcpi.minecraft as minecraft
mc = minecraft.Minecraft.create()

while True:
    mc.postToChat("Hi from PITOP ")
```

In this example, a simple Python script sends a message to the Minecraft chat window and displays it until someone stops the script.

Sonic Pi

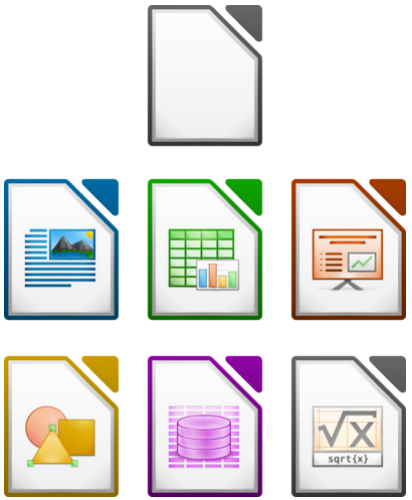
Explore a world of sound! Sonic Pi allows you to create, compose or perform music through code in an incredible range of styles.





G Suite

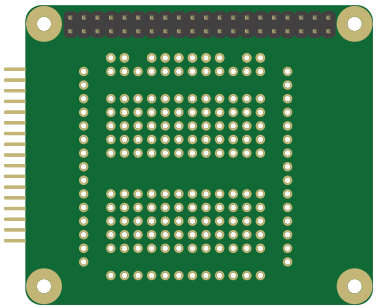
pi-topOS provides you with full access to G Suite - everything you need to do your best work seamlessly across your devices.



Libre Office

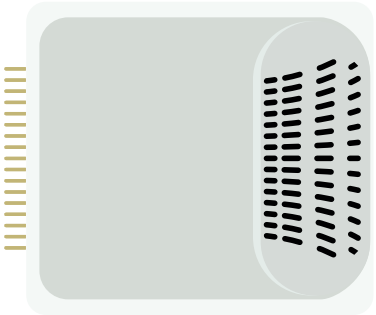
Fully compatible with Microsoft Office, macOS and Google Drive.

Visit www.pi-top.com to see our full range of amazing accessories!



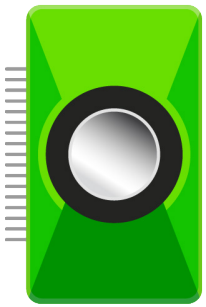
pi-topPROTO

Use **pi-top**PROTO to make circuits for **pi-top**CODER and CEED**universe** & even solder your own projects.



pi-topPULSE

pi-topPULSE brings the arts into STEAM. Code your own games, create music and light shows and build your own **pi-top** powered Amazon Alexa!



pi-topSPEAKER

Use **pi-top**SPEAKER to give your **pi-top** a voice. Enjoy immersive gameplay in CEED**universe** or making your own music in Sonic Pi.

FAQ & Troubleshooting

My pi-top doesn't turn on	Make sure that the Cooling Bridge is firmly secured on all of the pins. If this is not done properly, power will not be able to flow from the hub to the Raspberry Pi.
Cooling Bridge doesn't connect properly	You can alter the height of the hub using the screws. If the cooling mechanism doesn't slot on nicely, try adjusting the height of the hub.
Keyboard and Trackpad don't work	Make sure that the USB plug in the **pi-top** is properly inserted into the Raspberry Pi as this is what communicates with the Keyboard and Trackpad.
My pi-top won't show anything on the screen	Make sure that the microSD card has been securely slotted into the Raspberry Pi before powering on your **pi-top**.
Still stuck?	Please don't hesitate to email us at **support@pi-top.com** Send us a tweet to **@GetPitop** or visit us at **pi-top.com/support**

Notes

Notes

BE INSPIRED

pi-top
Model: **2.0**
Brand:**pi-top**
Manufacturer Name: **CEED LTD**
Manufacturer Address:
London, UK

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

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