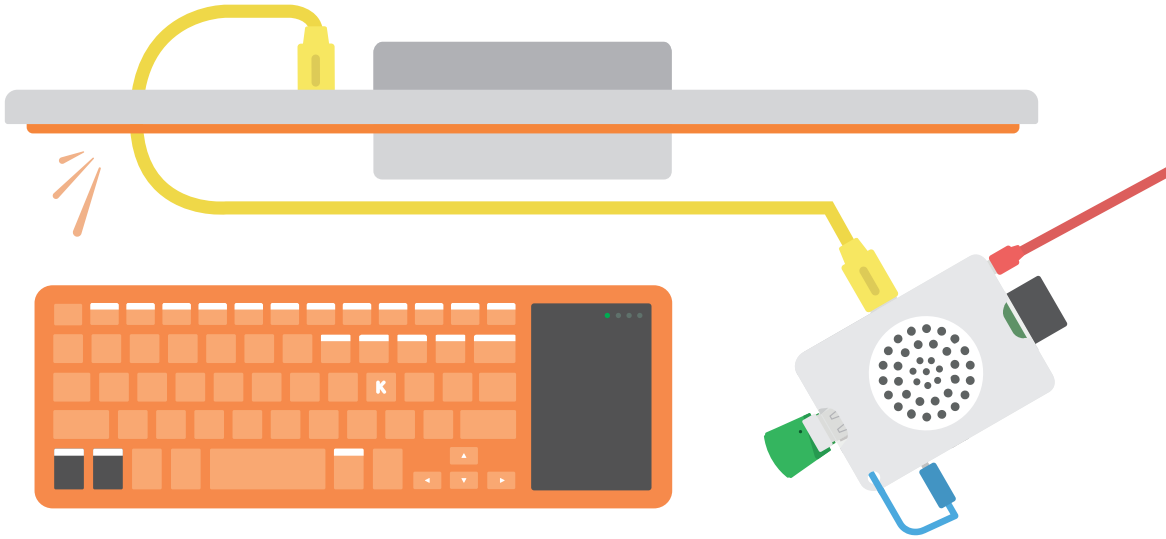
2

BOOK 2

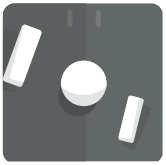
code powers



SNAKE

Page 20

PONG



Page 25

MINECRAFT

Page 38

MUSIC

Page 50

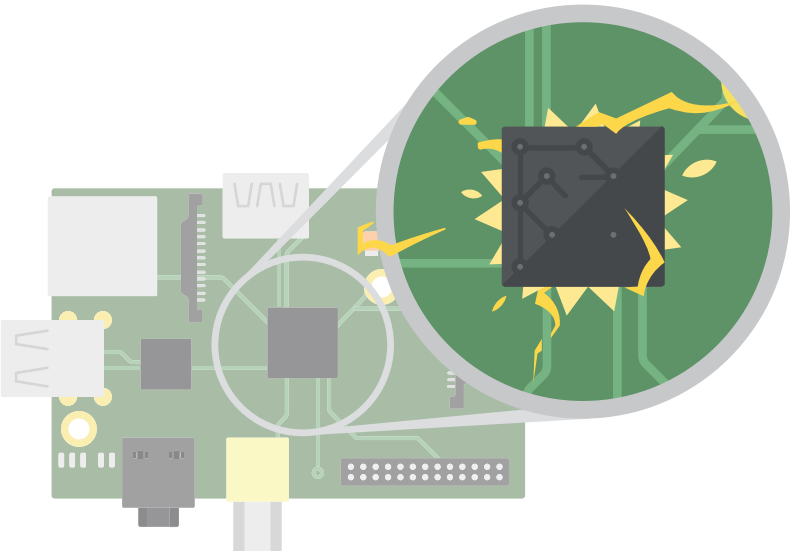
INTERNET

Page 52

APPS

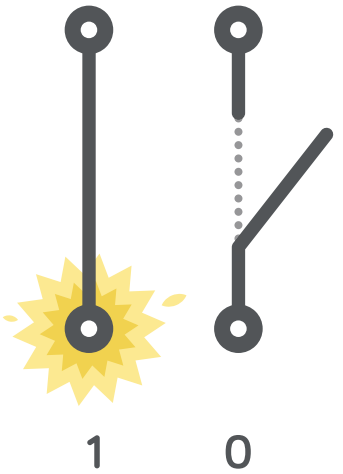
Page 54

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



It's made of billions of electric switches

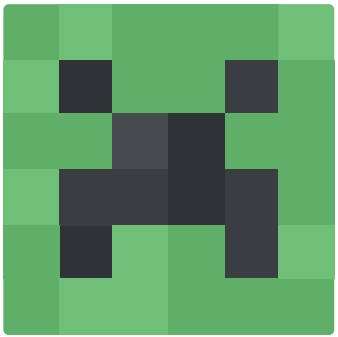
These switches send messages to one another in a simple code



If a switch is on, that means 1. If it's off, that means 0.

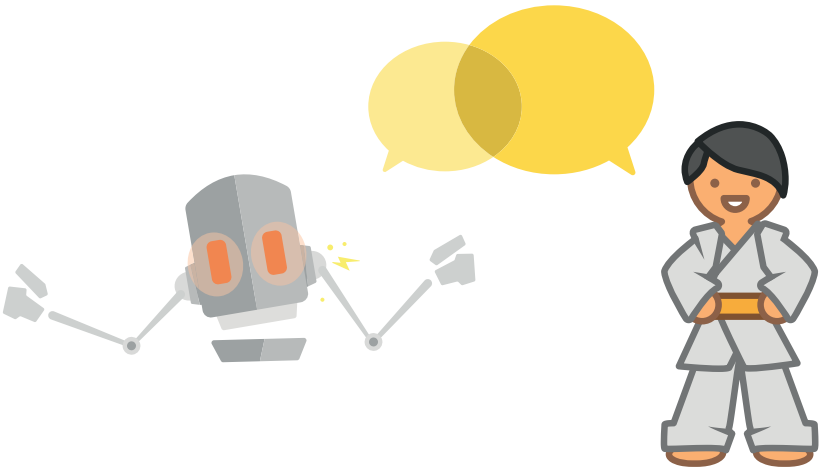
These switches store words, numbers, and pictures in 0s and 1s – binary code

1	0	0	1	1	0
0	0	0	0	1	0
1	1	0	0	1	0
1	0	1	0	1	1
1	1	1	0	0	1
1	0	1	1	1	1



As electricity travels through the brain, special rules tell the switches when to turn off and on

So how do we change the rules, without writing out billions of 1s and 0s?



We use magic words that both humans and computers can understand:
programming languages

A program turns human words into 1s and 0s

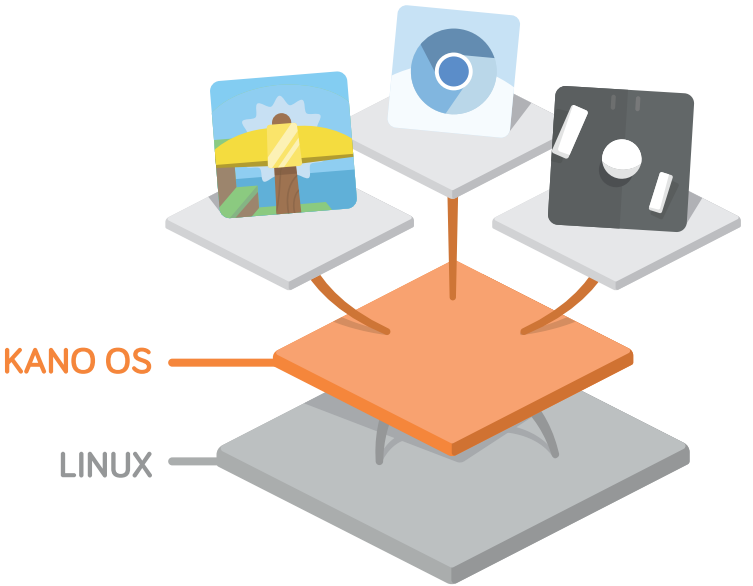
print “Hello World”

This is code. We use it to give our computer step-by-step instructions.

Your Kano speaks dozens of languages – Python to control Minecraft, Javascript to build websites

Its code is open source. You can copy it, change it, and share it for free!

Kano OS is based on Linux - the most famous open-source project

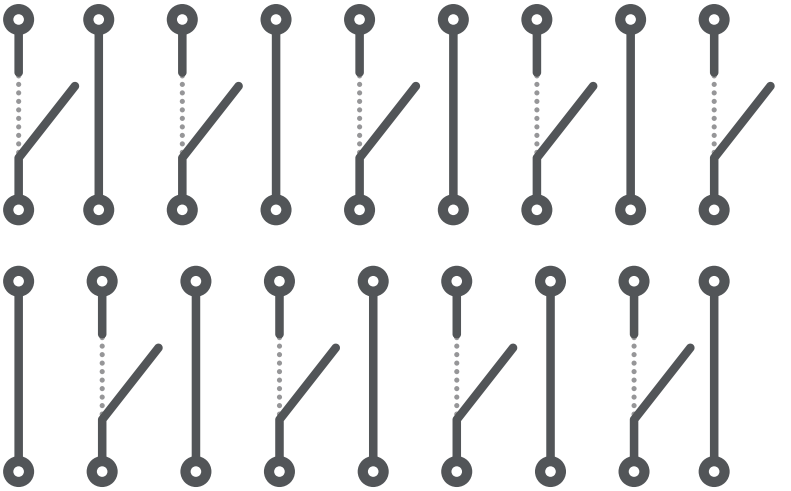


Linux is an operating system, which connects a computer's codes together

Linux powers washing machines...

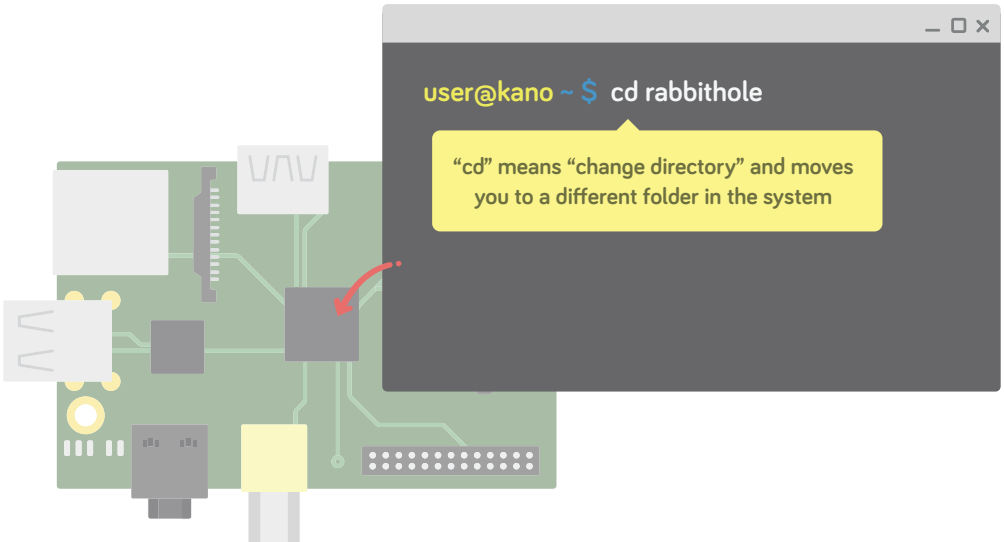
And even the International Space Station

Your computer can do incredible things, but don't forget...



It's just a big pile of switches that you can control with simple commands!

How? We have a tool that lets us talk directly to the brain

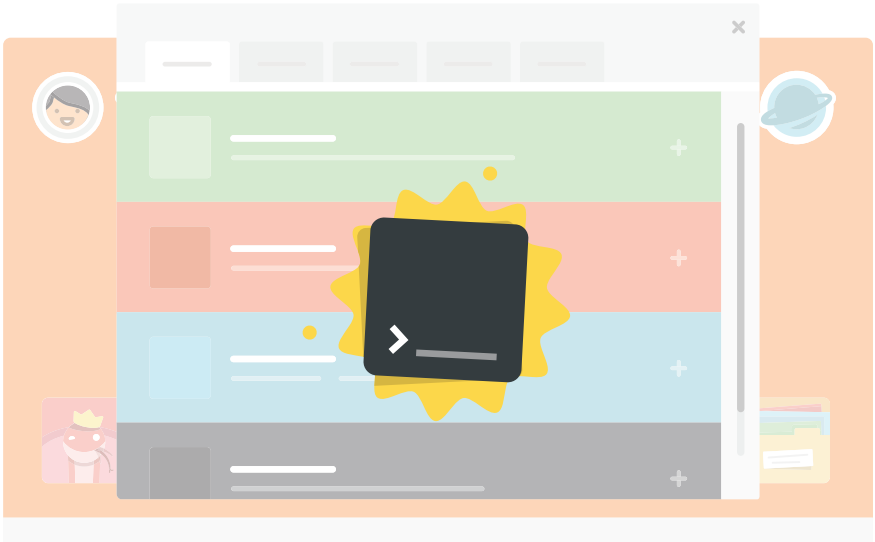


It's called the command line

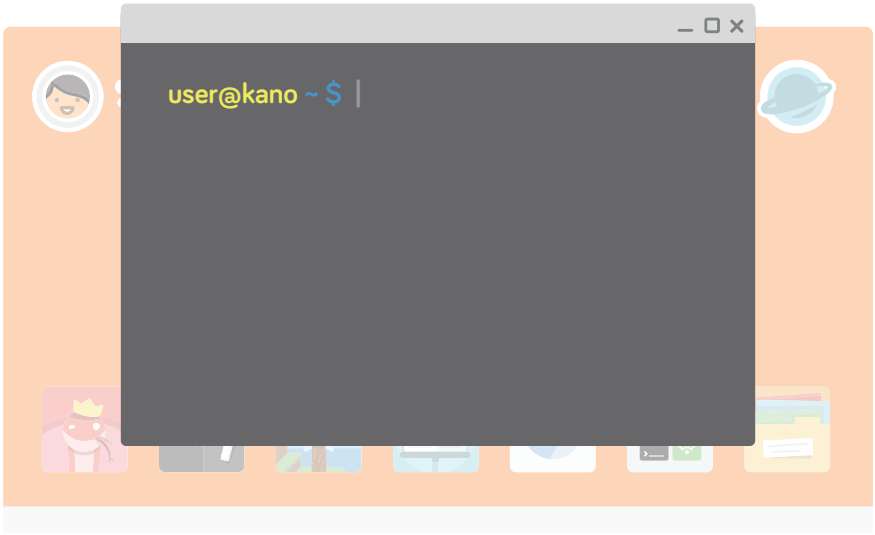
You can find it from the Kano Desktop!

Click on Apps

Go to the Code tab and click on LX Terminal



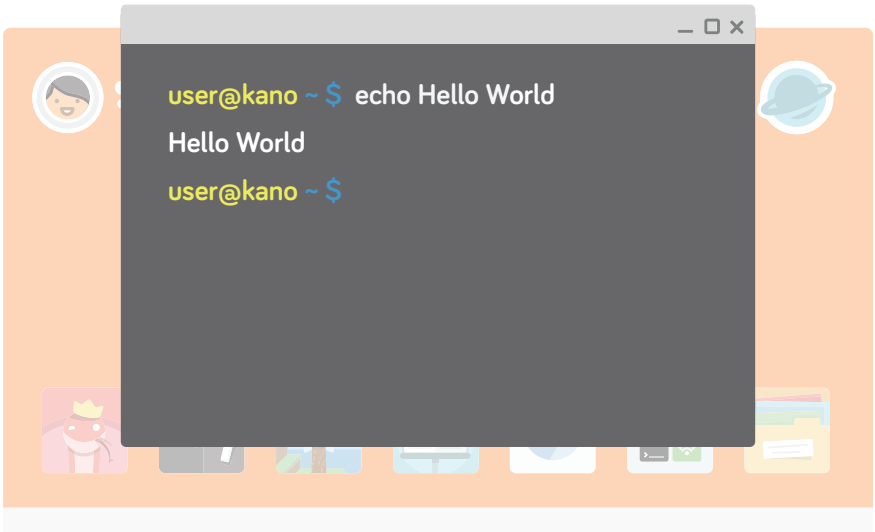
This is the command line



With coded commands, we can give your computer a voice

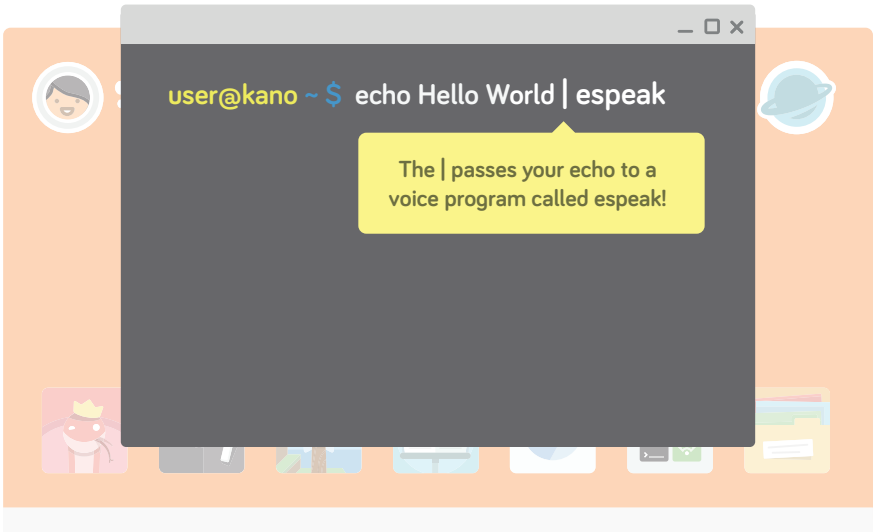
Type **`echo Hello World`** and press enter.

You just made the computer run a command!



Let's try making it talk with the speaker

Try writing **`echo Hello World | espeak`**

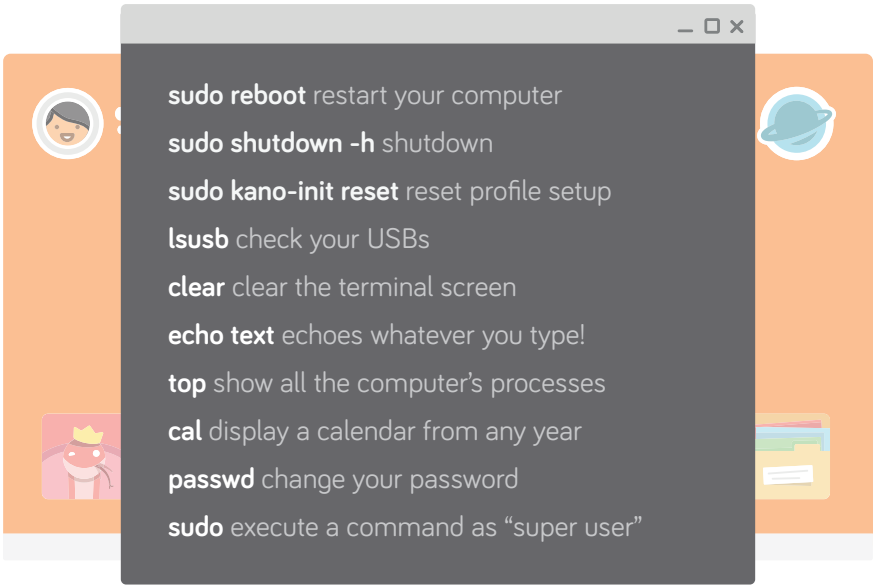


The computer turned text into sound!
Both are types of data, 1s and 0s moving in the brain

We can make it say things in different voices, too

Try adding **`-v fr`** to make it speak with a French accent

The terminal is a place for wizards. Here are a few more magic spells to try:

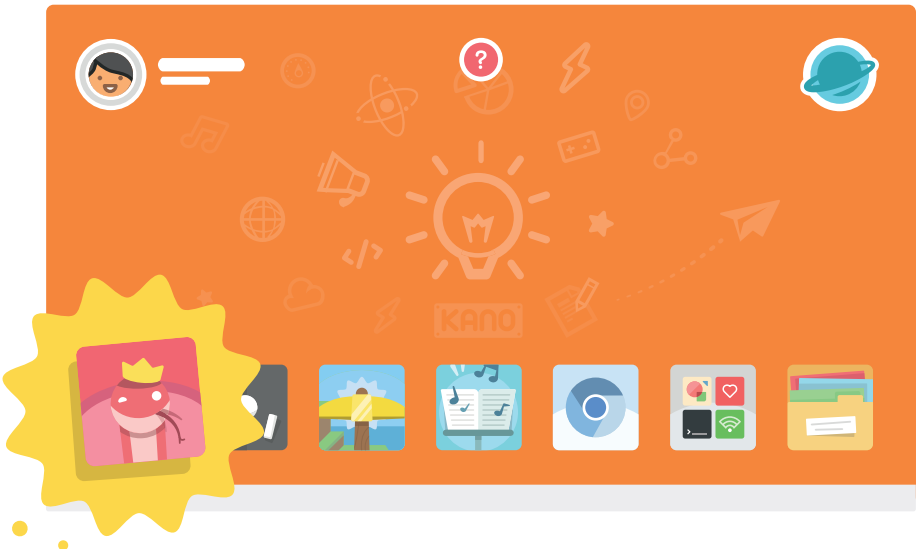


When asked, your password is "kano"

Go back to the desktop by clicking the cross in the upper-right corner

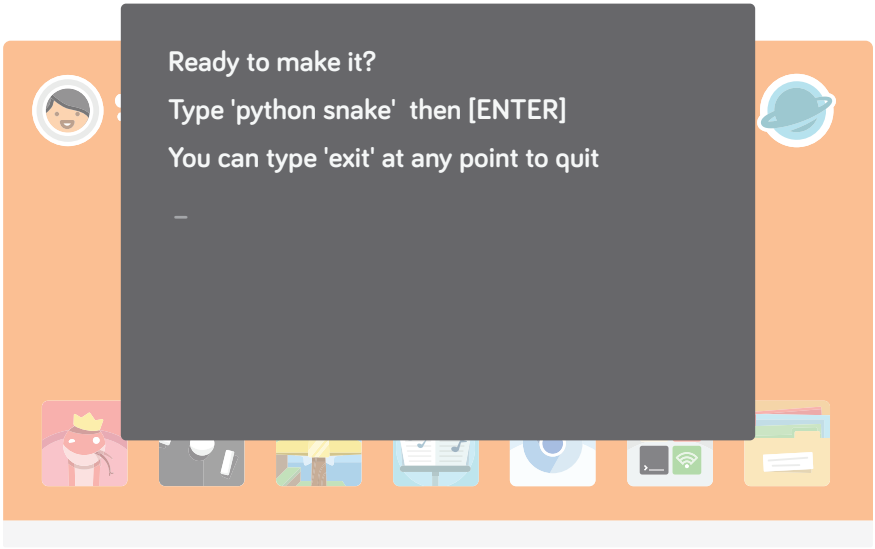
Or the Home button at the bottom

The command line is great for coding games like Snake



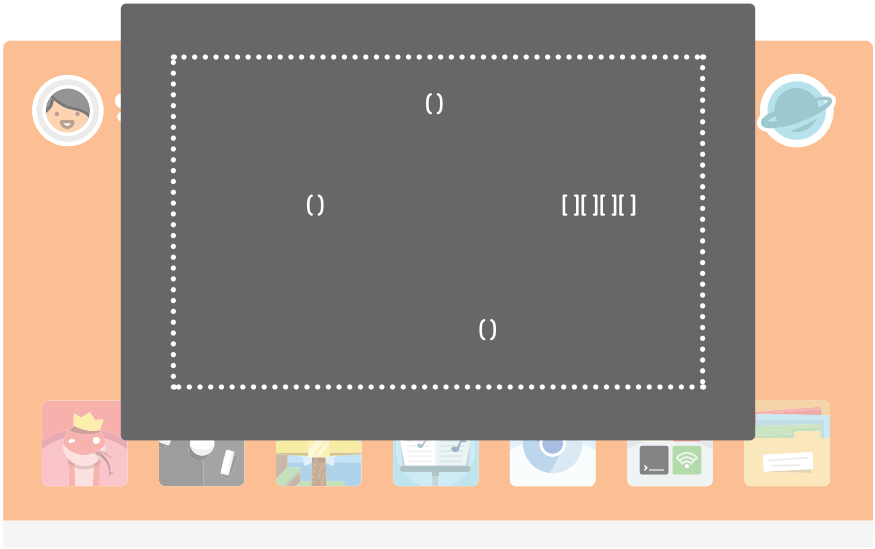
Click on Snake

Type a command, then press [ENTER] to make it real



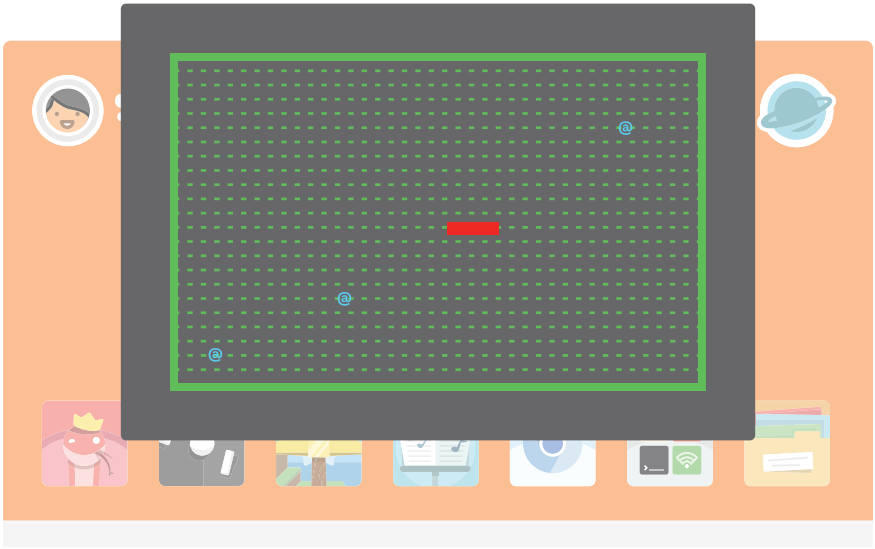
Follow the instructions on your screen to start coding

Basic Snake is cool



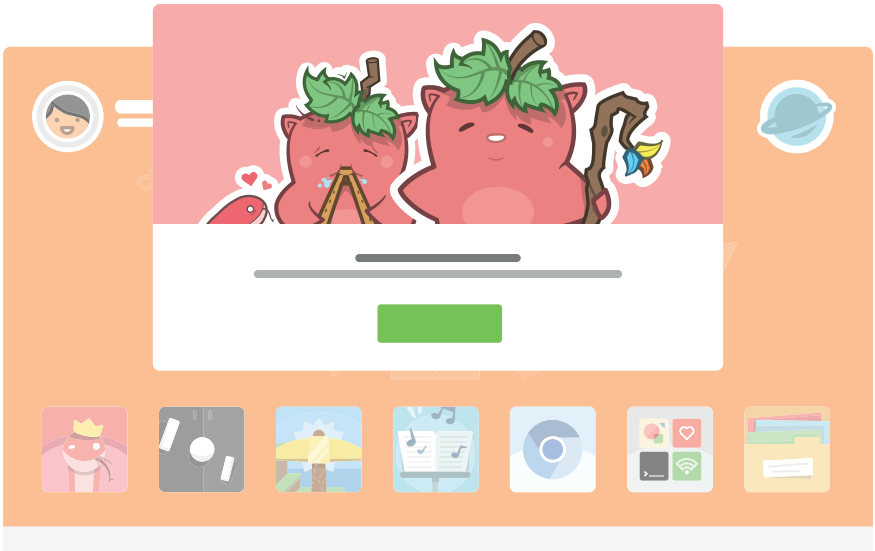
But we can make it cooler...

[python snake -b m] will make the board smaller



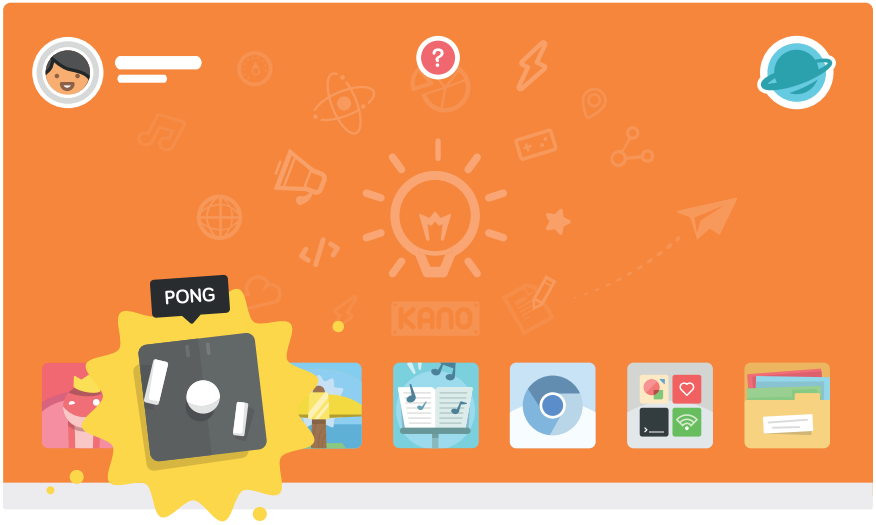
[python snake -t jungle] will give it a new theme!

Make the game harder, faster, more colorful!

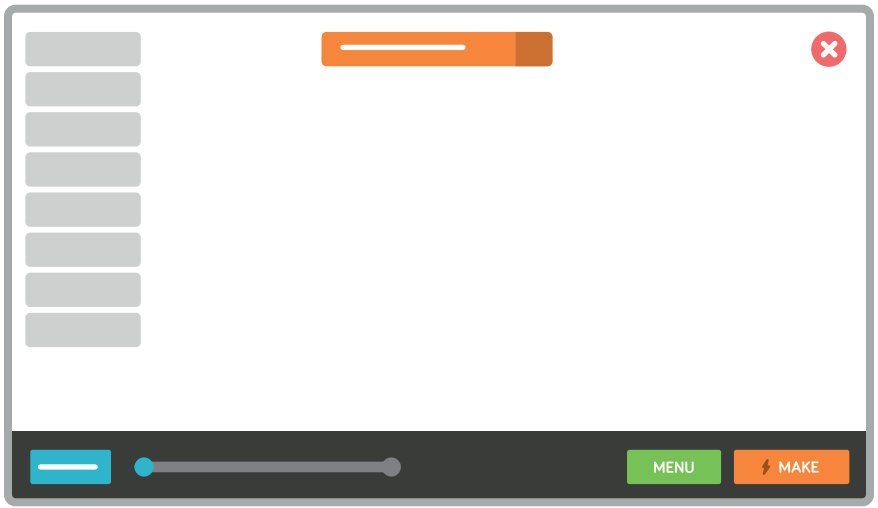


Beat the Level to get a new character

Now let's try Pong

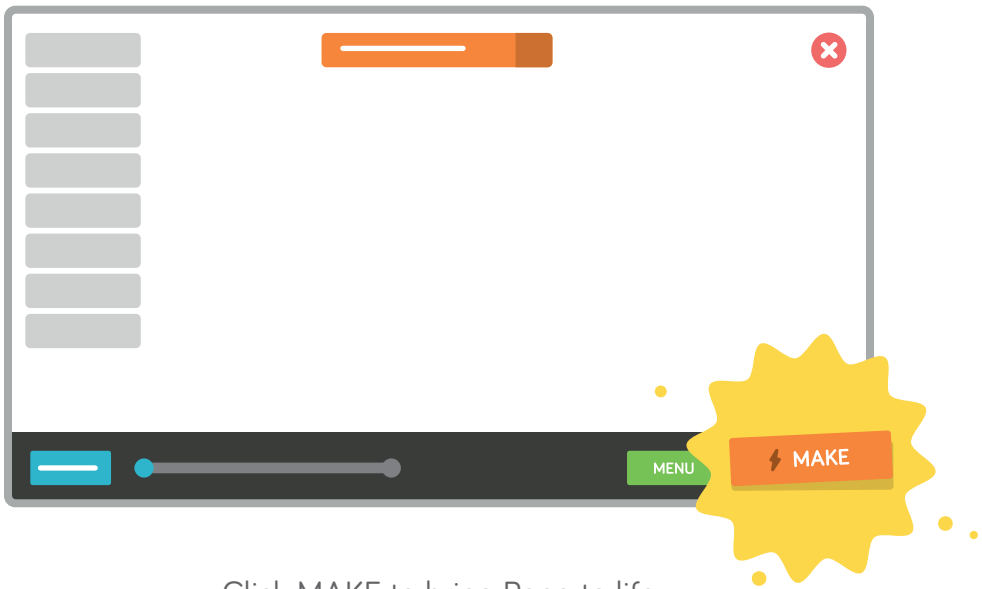


In Snake, we typed commands



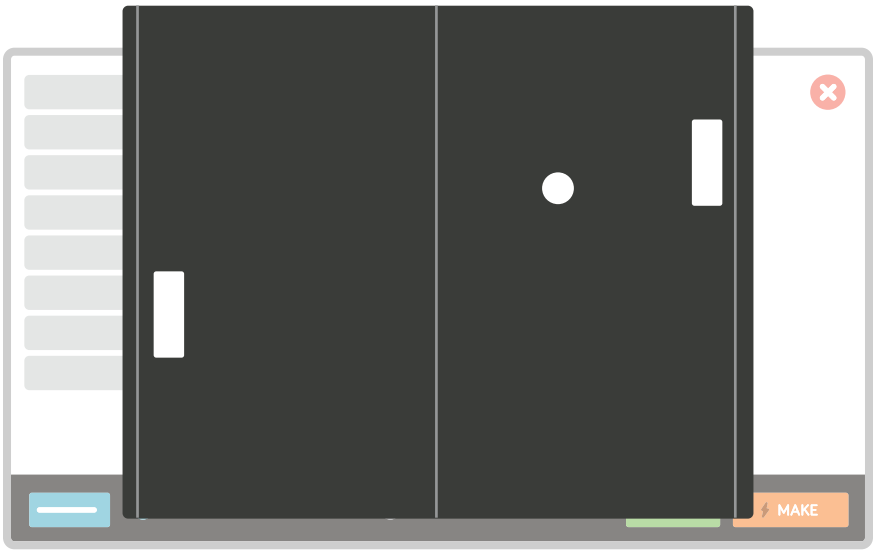
Now we'll build code with Kano Blocks!

First, start the game



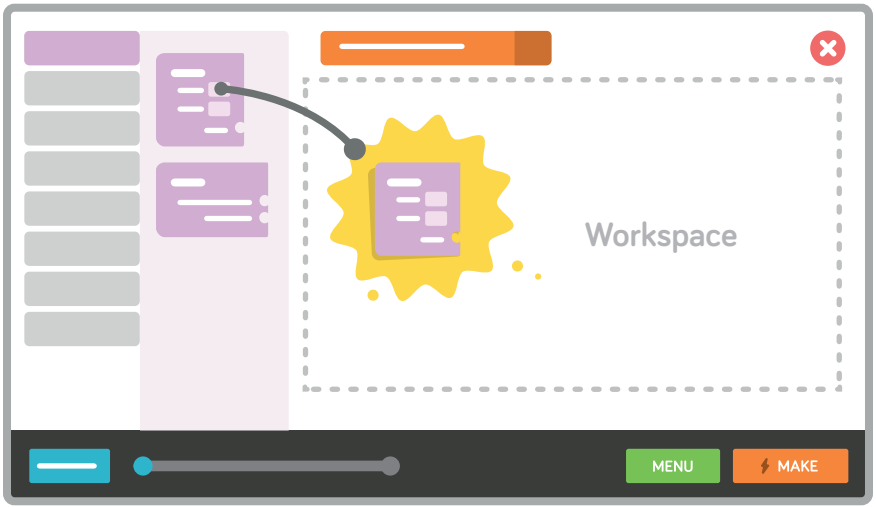
Click MAKE to bring Pong to life

Use the arrow keys to play



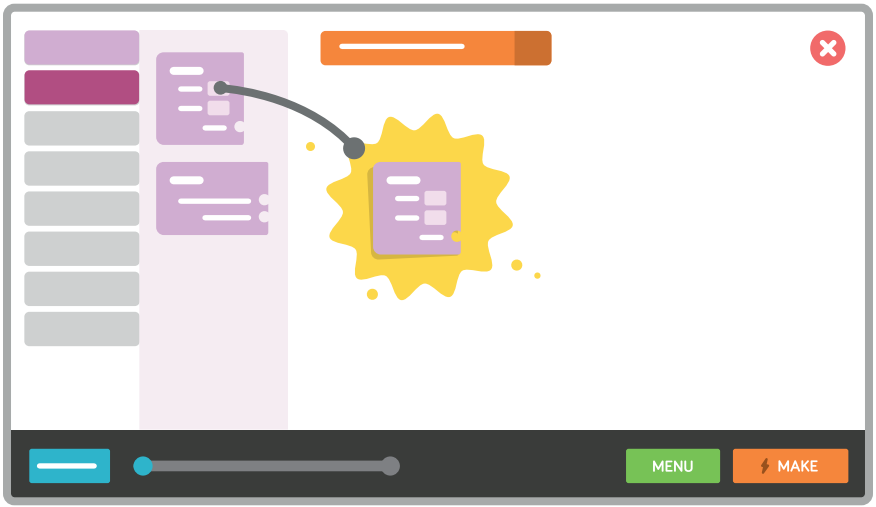
When you're ready to make Pong even cooler,
press [Q] or click outside the window

Click on a block, hold down your mouse, and drag it into the workspace...



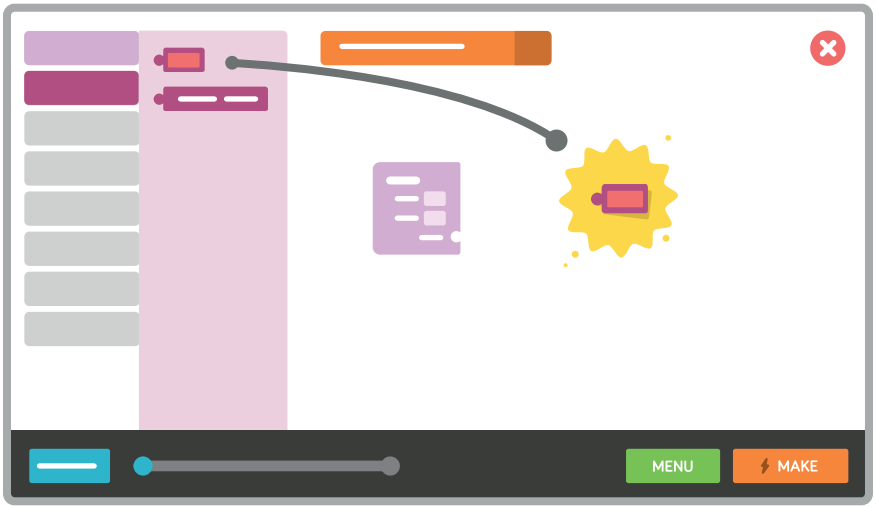
Then click MAKE

Let's paint the board



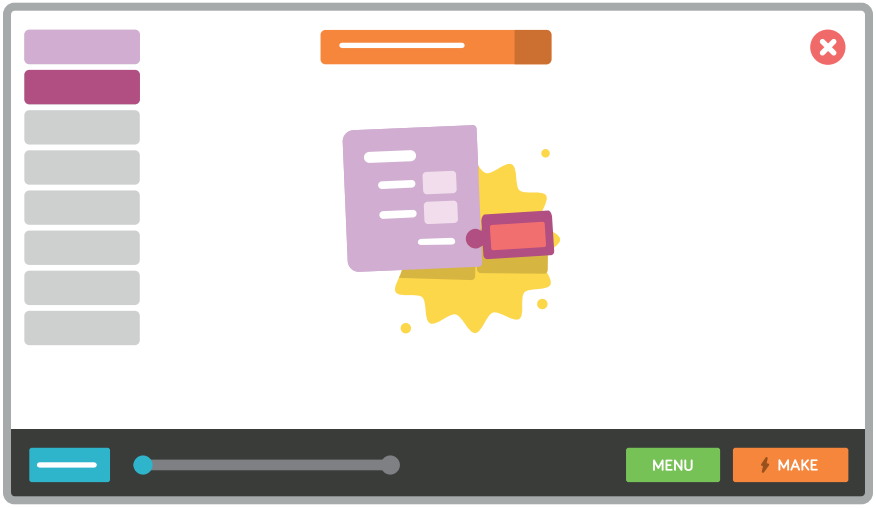
Click Start Ups, then click and drag the Board block into the workspace

Now let's pick a color!

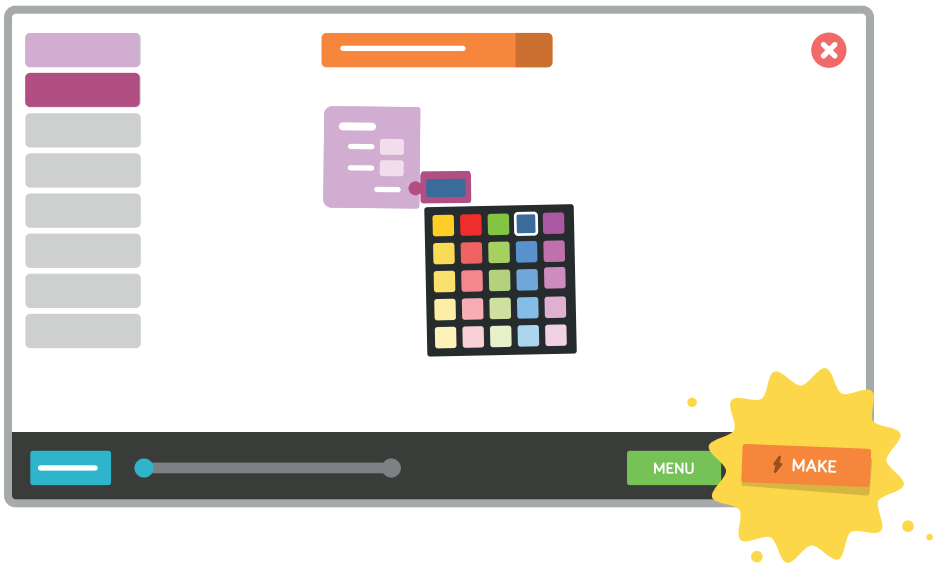


Click on Color, and drag in the Color block

Connect it to the Board block

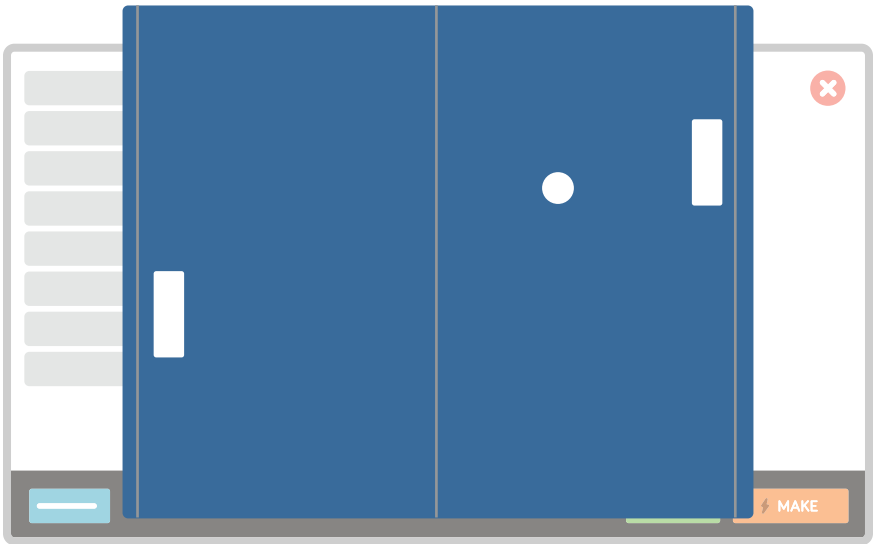


Click the Color block, and choose a new color



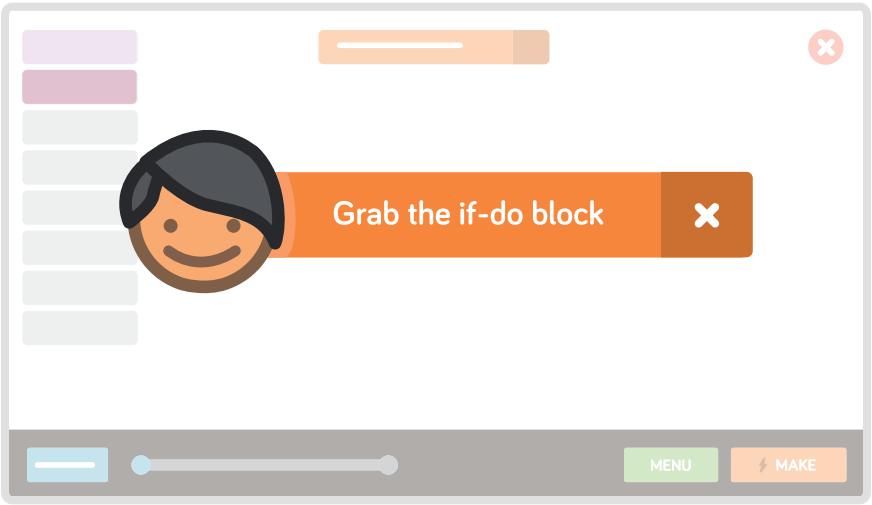
Then click MAKE to bring it to life

Nice!



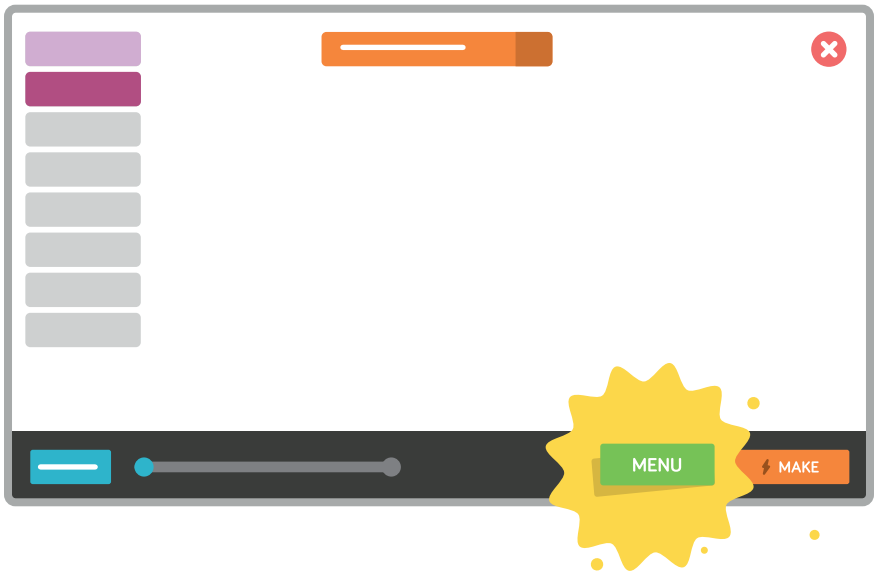
Next, you'll use Blocks to change speed, size, and rules!

Follow the tips at the top

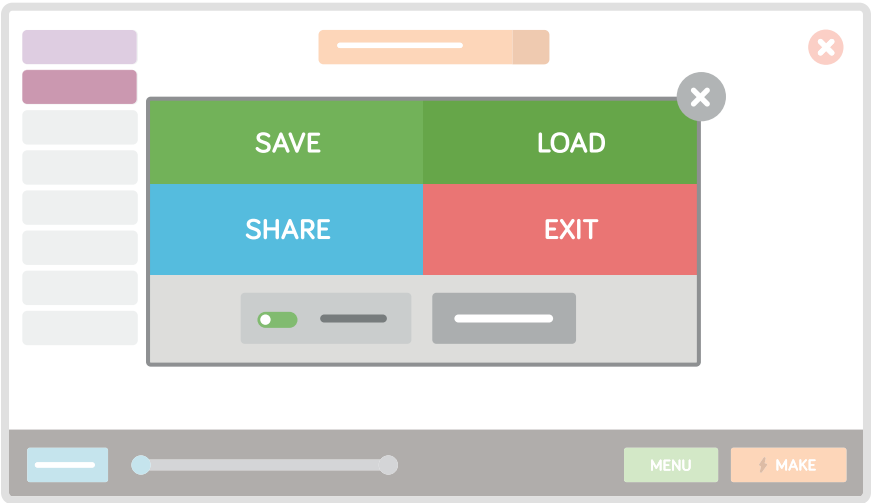


Judoka will guide you to the next block you'll need

When you're ready, click on MENU



SAVE your creation, and SHARE it with the world!

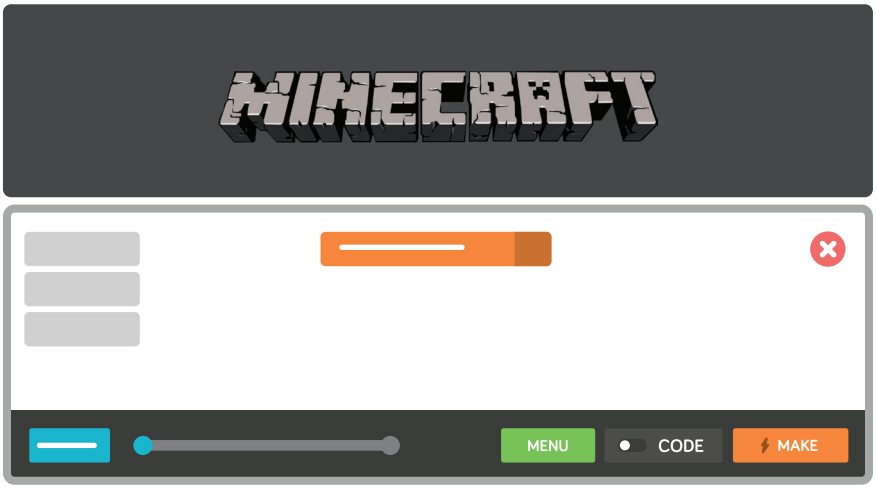


Click EXIT to close Pong

Ready for some Minecraft?

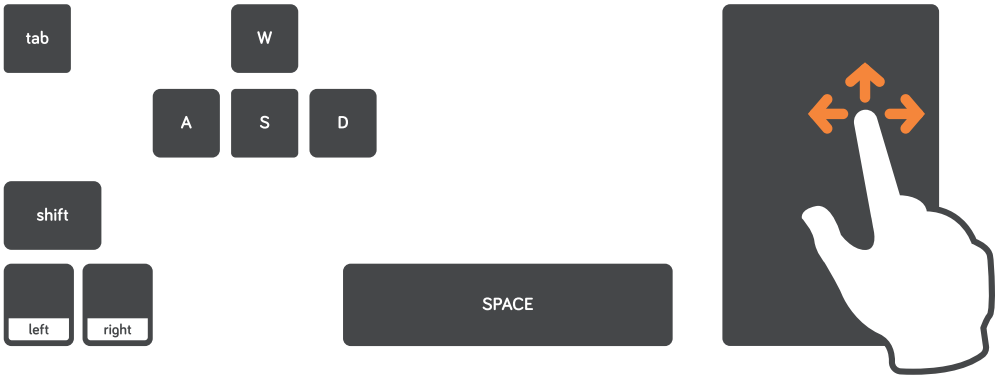
Click once on the icon

The top half of the screen is Minecraft, creative mode



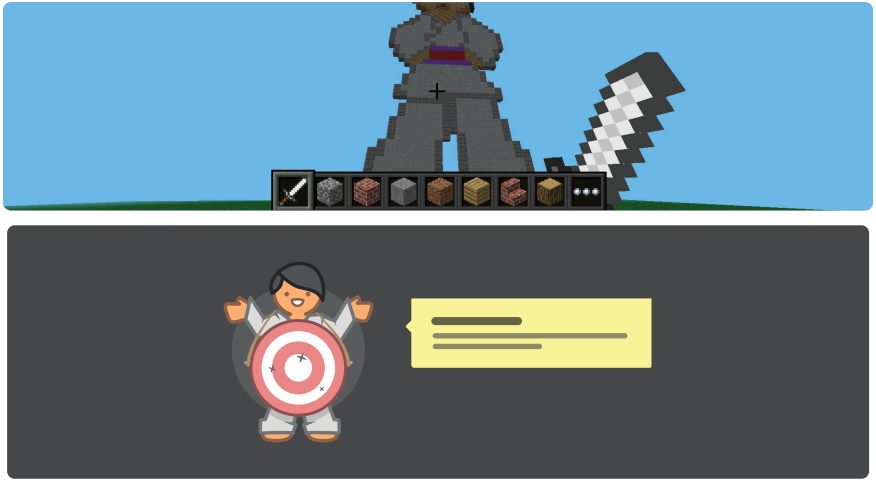
In the bottom half, you'll use Kano Blocks to code the game yourself!

Use these controls to walk, jump, and fly. Click to place and destroy blocks.



See what you can build!

Ready to change the rules, make volcanos, and climb magic stairs?

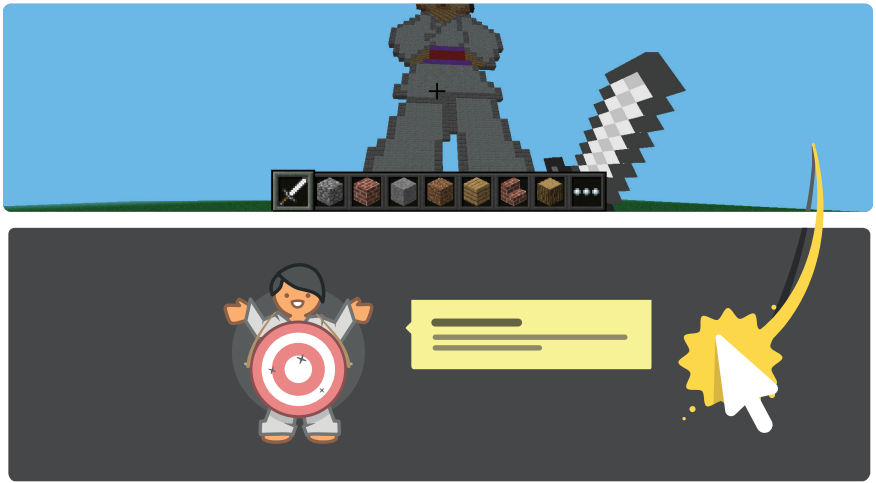


Let's go to Blocks with a quick mouse maneuver

To go back to Kano Blocks,
you need to activate the bottom half of the screen

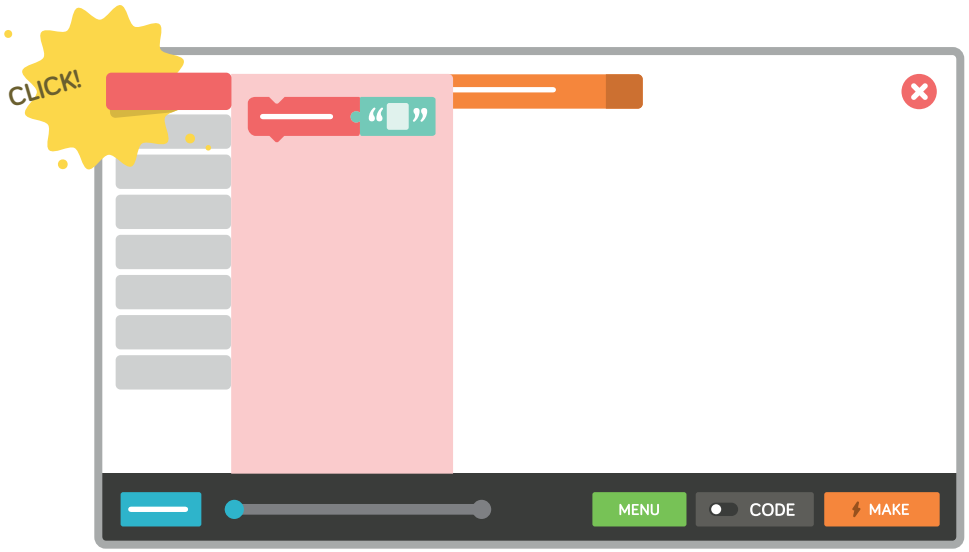
Press [tab] on your keyboard to free the mouse from Minecraft

Drag the mouse down until you can see it...



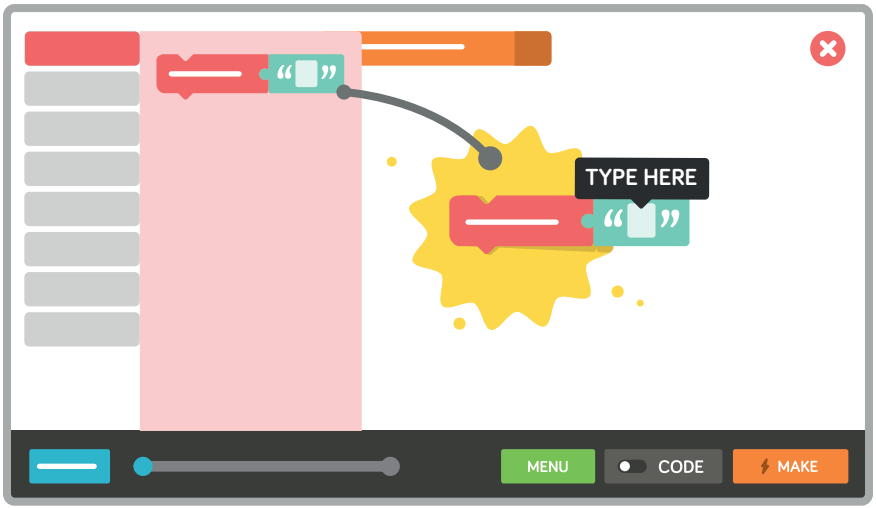
Then click

First, we'll use Blocks to code a message



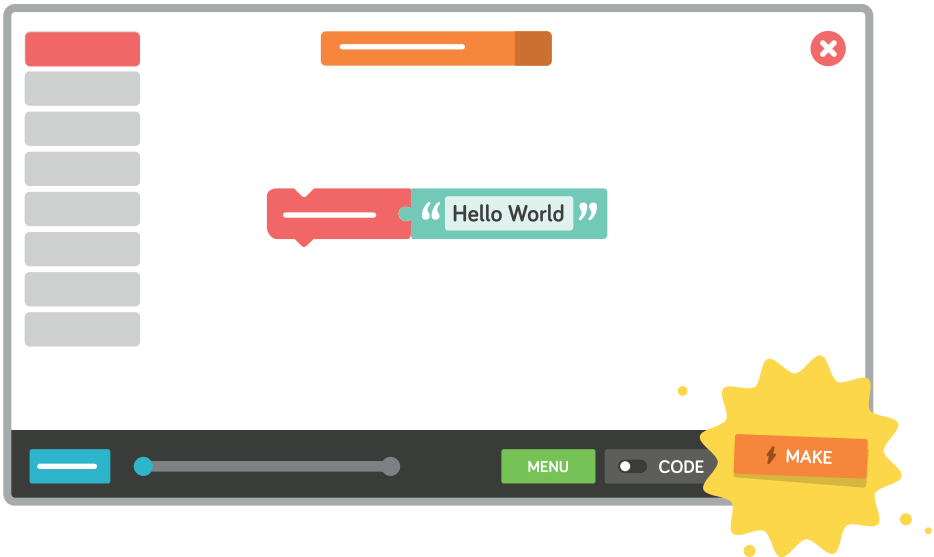
Click on the ACTIONS tab

Click the [post To Chat] block and drag it in...



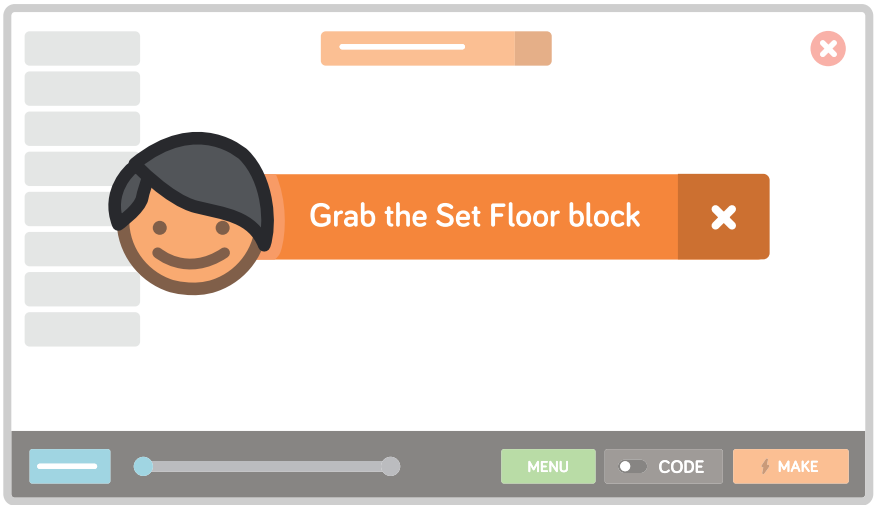
...then click on the block and type something inside

Click MAKE to run your code



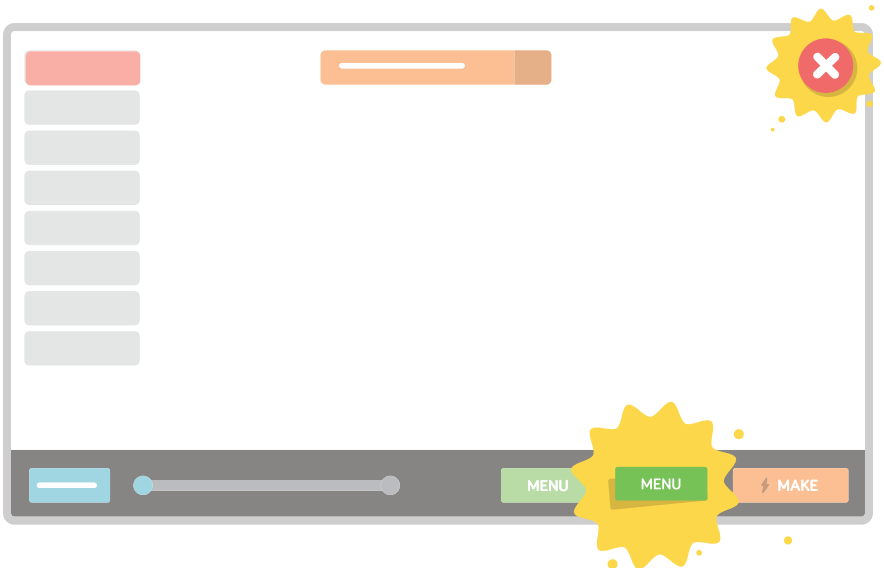
And that's just the first challenge...

Follow Judoka's hints and tips...



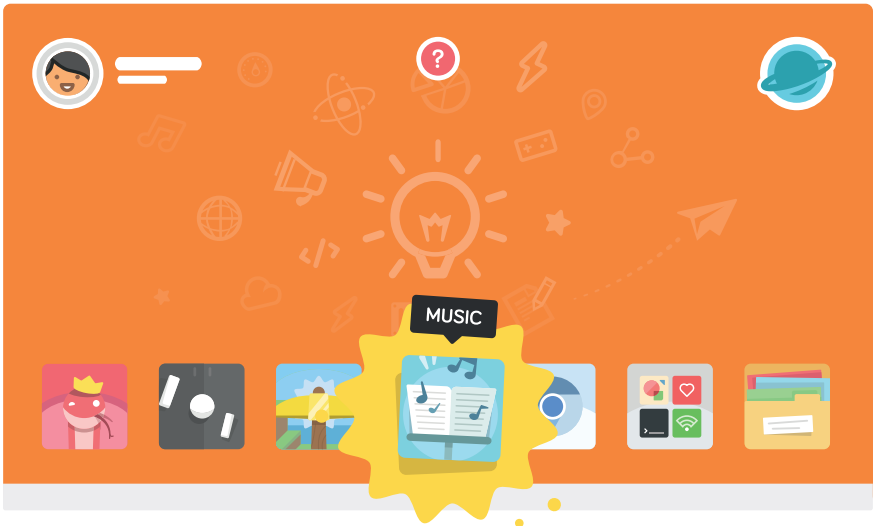
You can build towers, castles, volcanos, and more...

Beat all the challenges to become the Master Builder



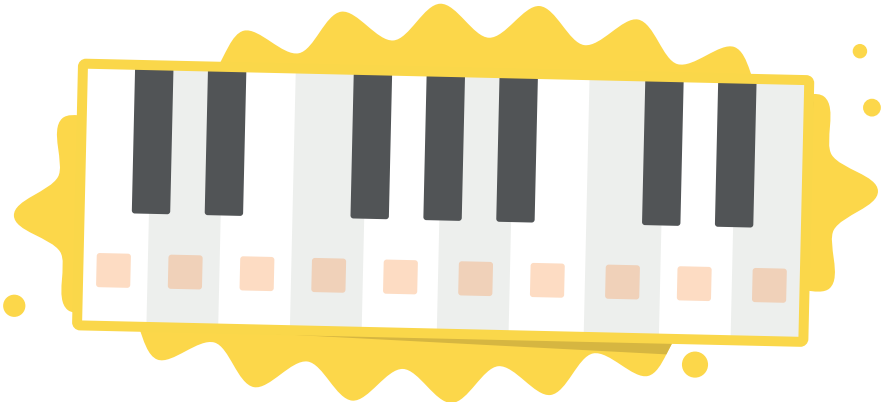
When you're done with Minecraft, click the red cross or MENU to EXIT

Ready to raise the roof?



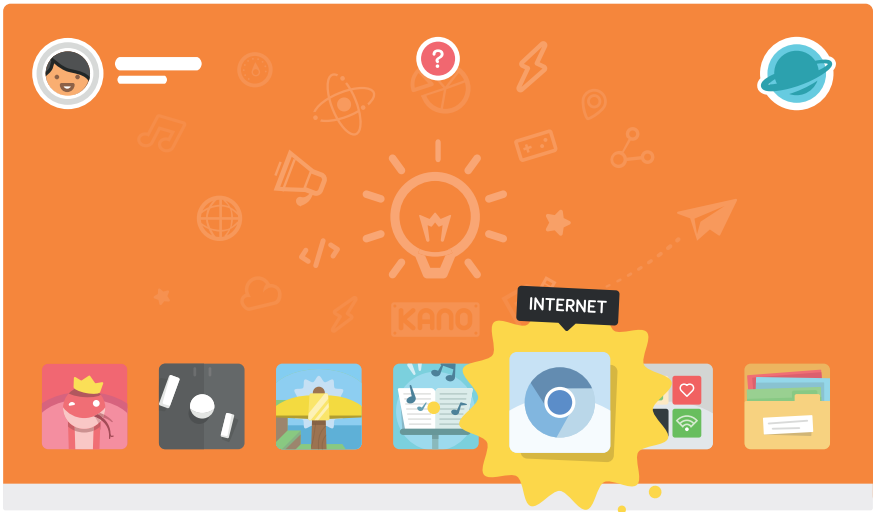
Click on Music

Play tunes and beats on your keyboard



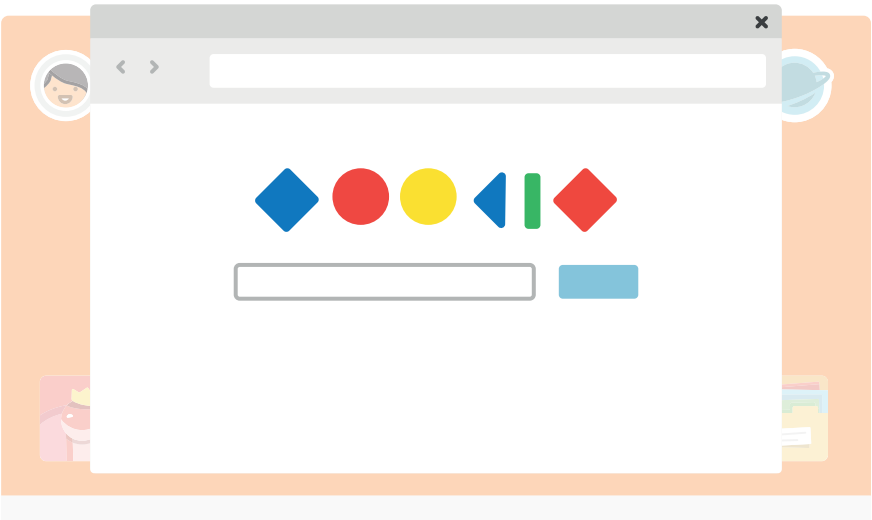
Choose your instrument and make loops!

Now let's try going online



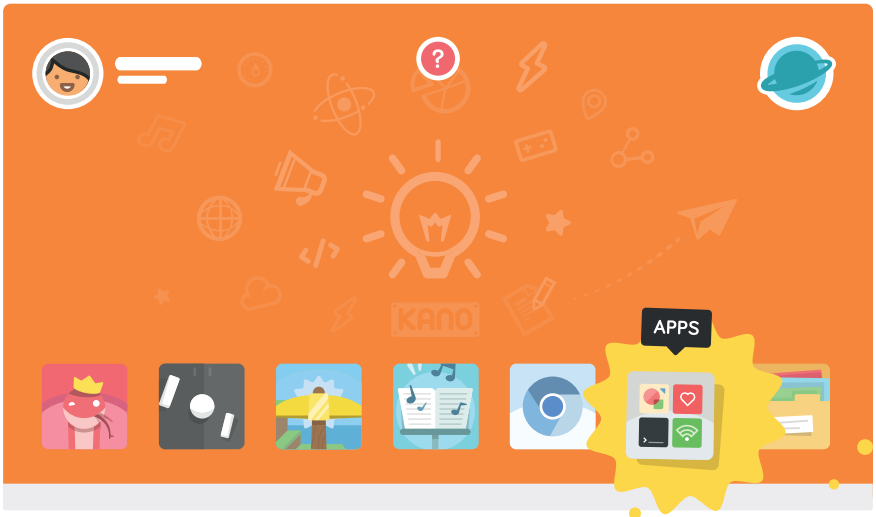
Click on the Internet icon

Visit sites with lots of text, like Wikipedia and Google News, for best performance



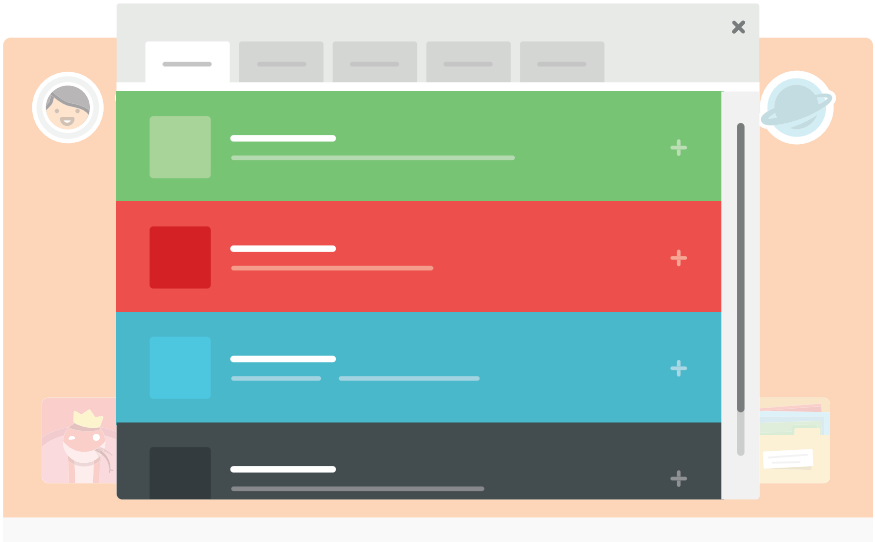
To watch YouTube, go to the Apps folder

There's no limit to what your Kano can do

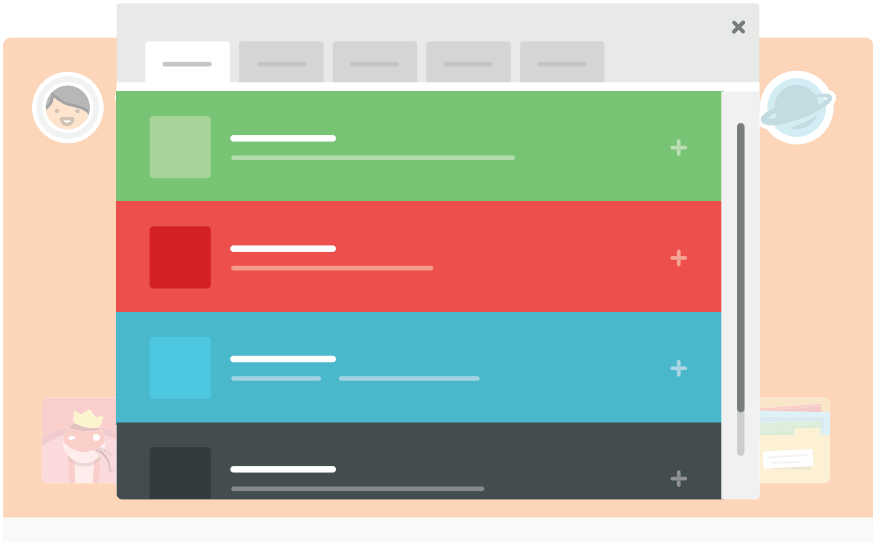


Click on Apps

These apps let you draw, browse, code, calculate – and more!

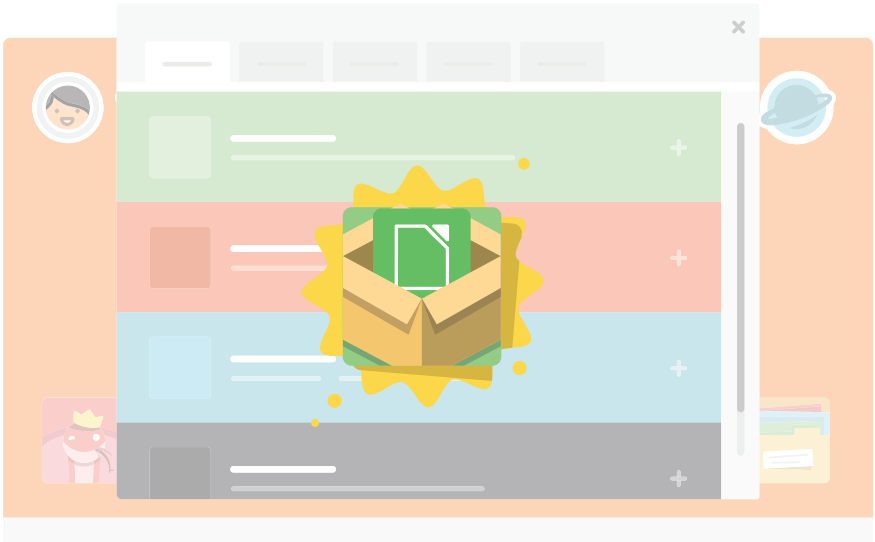


You can download even more apps in Kano World



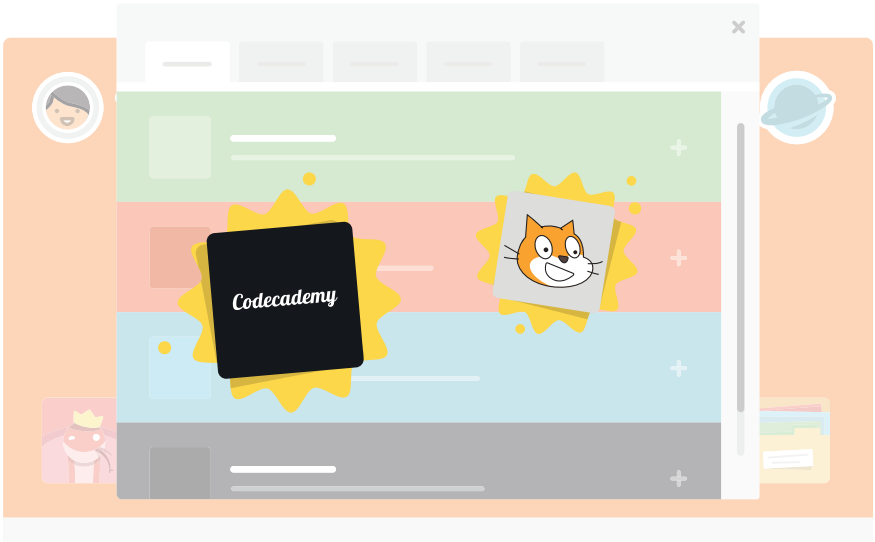
Try a few out

Want to get some work done?



Click to install LibreOffice, with docs, spreadsheets, and more

Want to learn some more code?



Try Codecademy lessons or Scratch games

Want to use a phone or tablet as a Kano screen?

Click on VNC, and follow the on-screen instructions

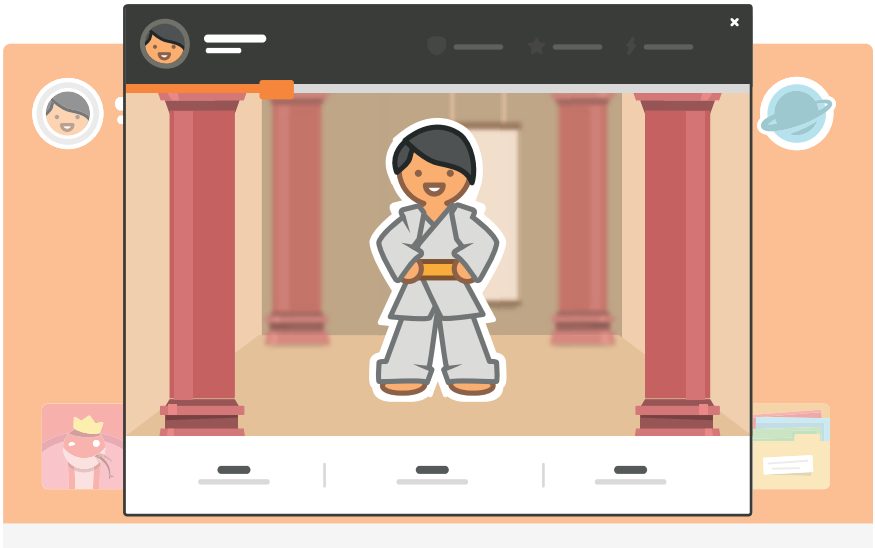
Want to play normal Minecraft, full screen?

Just click on its icon in the Games tab

Now, let's talk about you

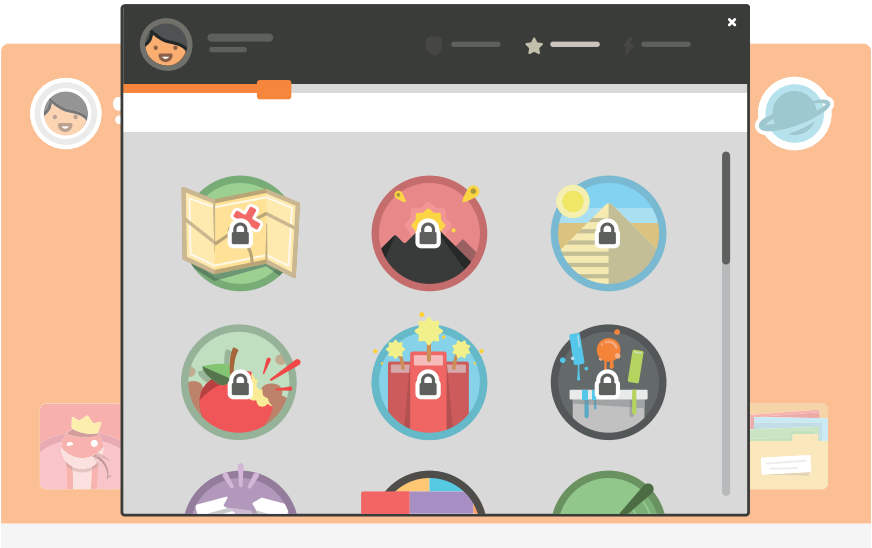
Click on your name in the top-left corner

In here, you can customize your character and background



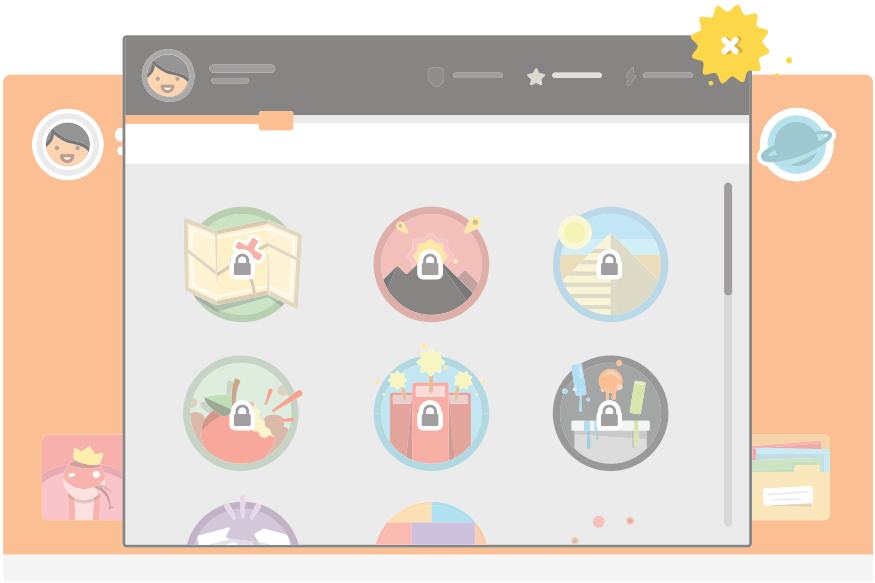
You can also check out your badges and saved creations

The more you play, the more you'll win!



Beat challenges to gain XP, unlock swag, and level up

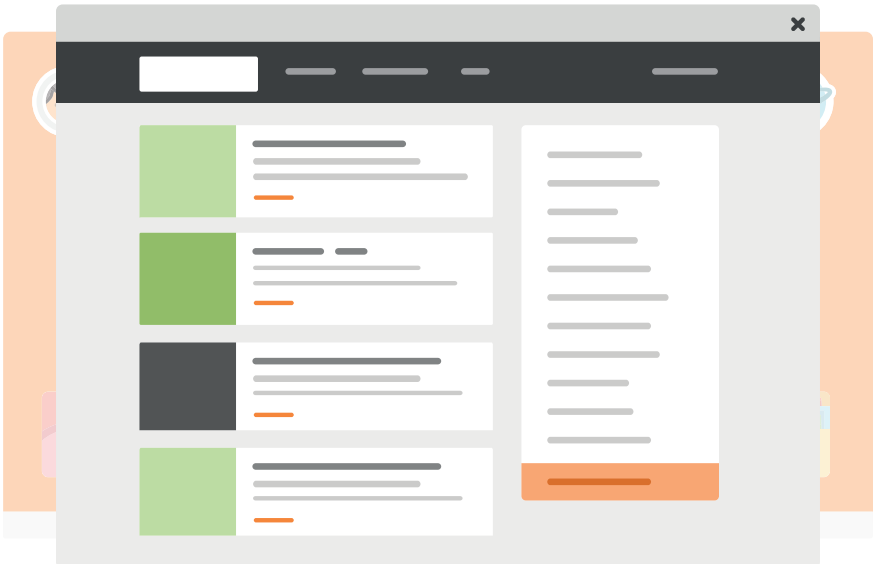
Close your profile to get back to the desktop



Want to add new apps and share your creations?

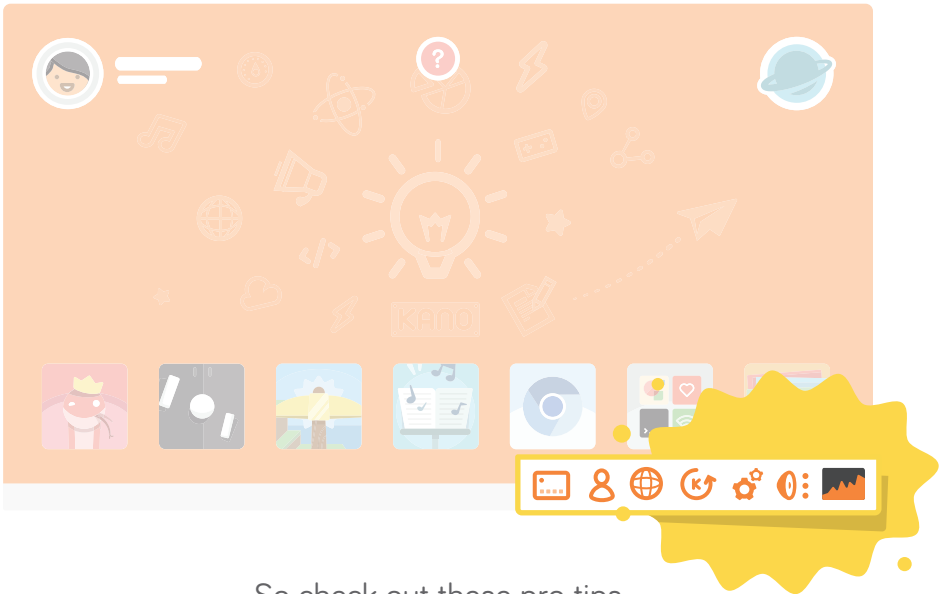
Click on Kano World

See how you stack up against Kano creators around the world



And download brand new challenges

You're almost a Kano Master...



So check out these pro tips

Home Jump back to desktop

Profile Log in, sync, backup, and restore your profile

Internet Status Check your connection

Kano Updater If it's orange, click to get new stuff!

Settings Change your setup

Volume Keep it bouncing

CPU Monitor If it's full, wait a few seconds

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