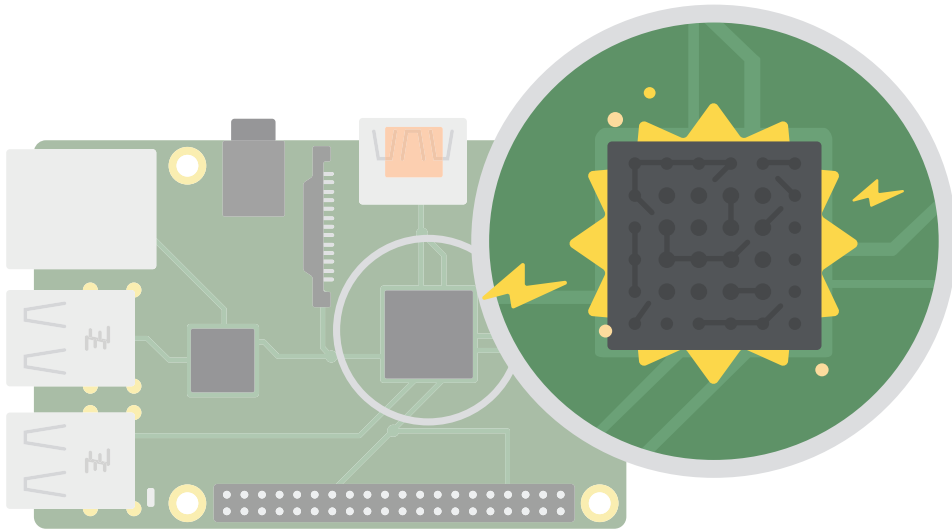BOOK 2
code powers

2
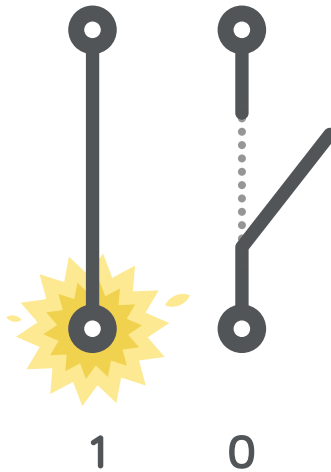
How does your computer think? If you look deep inside…

It's made of billions of electric switches
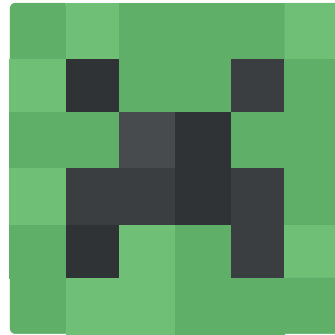
These switches send messages to one another in a simple code

1 **0**

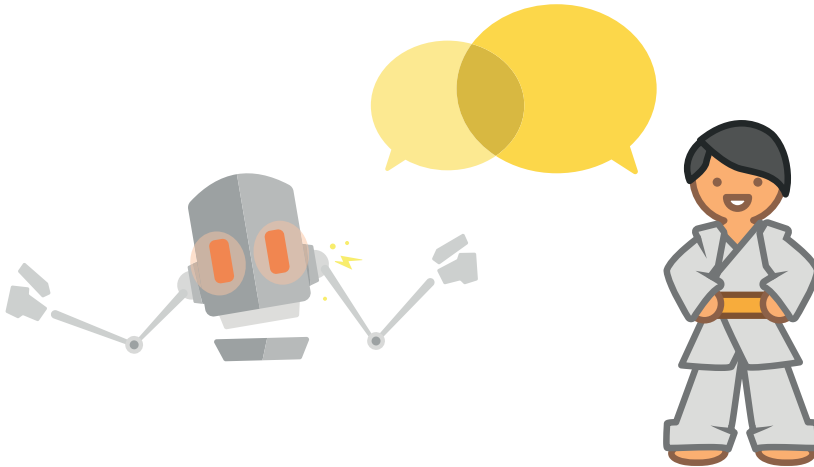If a switch is on, that means 1. If it's off, that means 0.

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

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

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
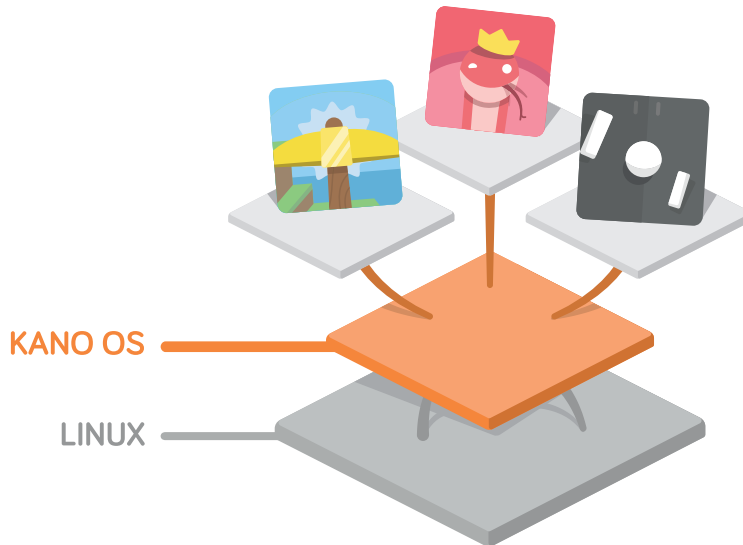
print "Hello World"

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
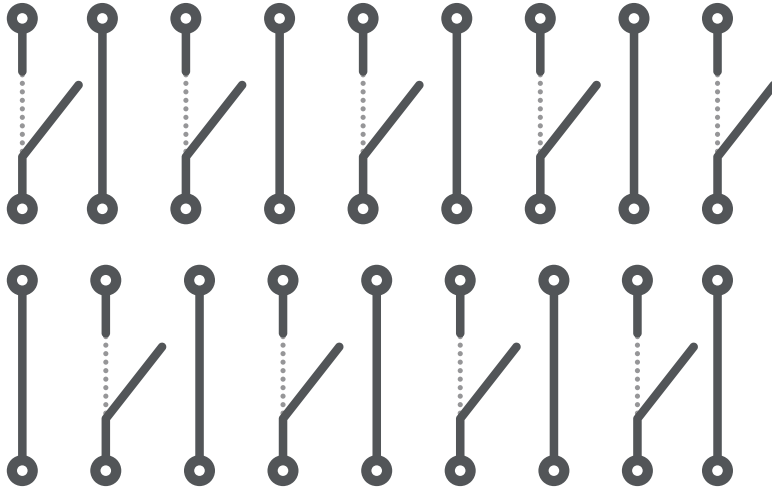

KANO OS

LINUX

Linux is an operating system, which connects a computer's codes together
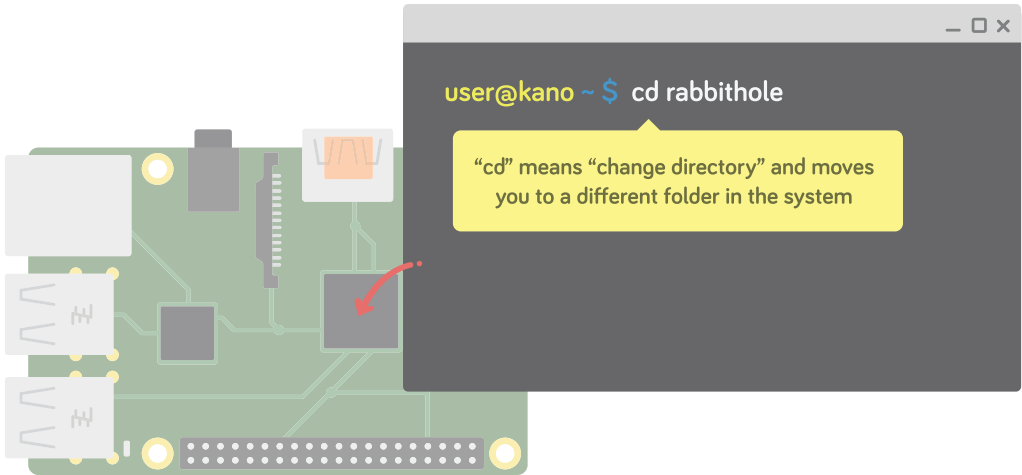
Linux powers washing machines...

And even the International Space Station

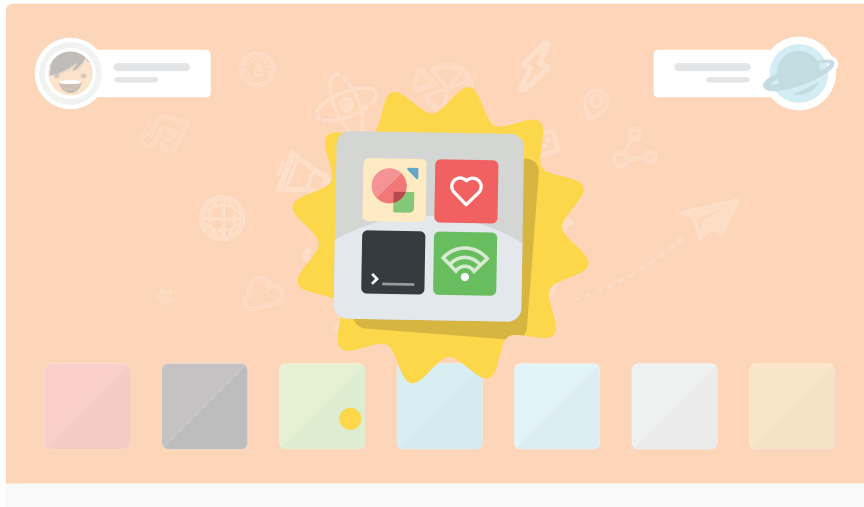Your computer can do incredible things, but don't forget...

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
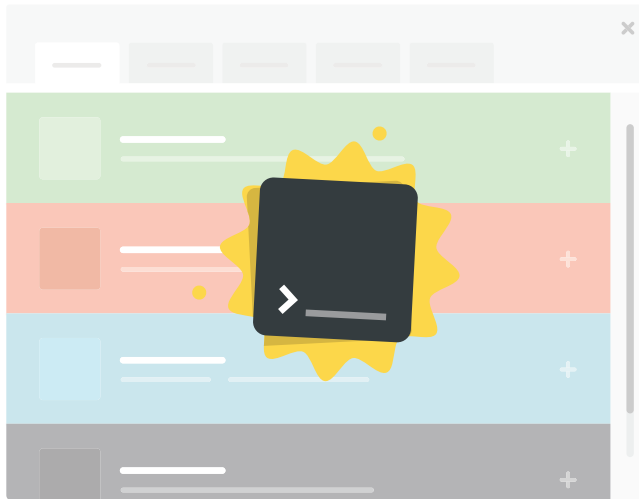

It's called the command line
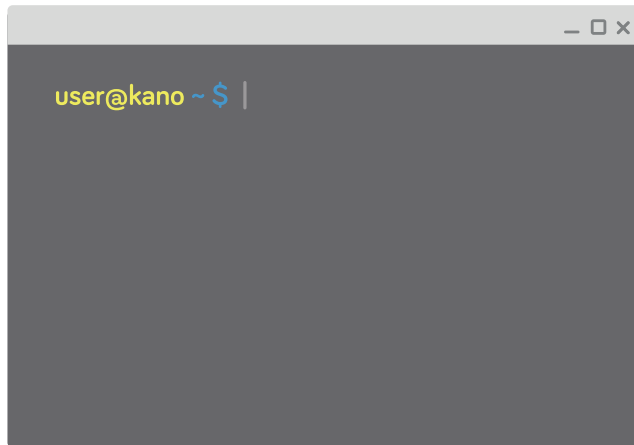
You can find it from the Kano Desktop!

Click on Apps

Go to the Code tab and click on LX Terminal

This is the command line

```
user@kano ~ $ |
```

With coded commands we can give your computer a voice
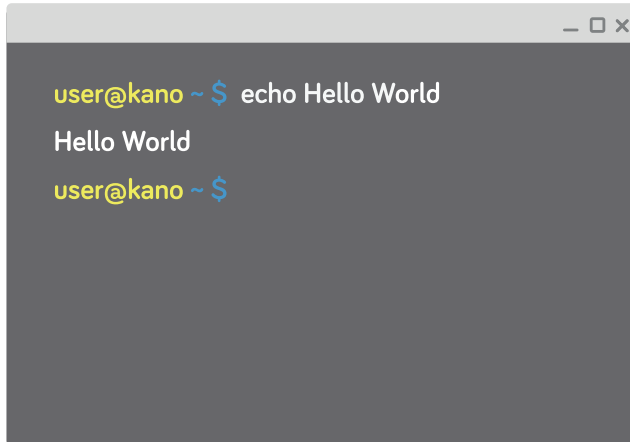
Type **echo Hello World** and press enter

You just made the computer run a command!

```
user@kano ~ $ echo Hello World
Hello World
user@kano ~ $
```

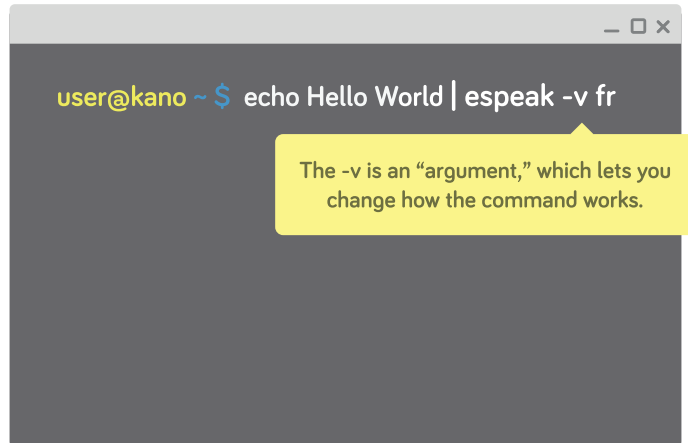Let's try making it talk with the speaker

Try writing **echo Hello World | espeak**
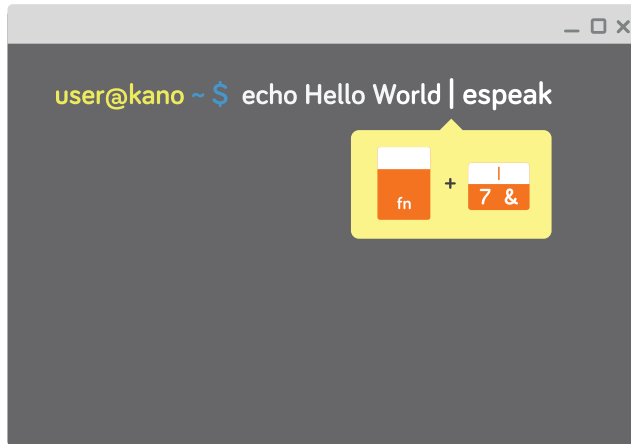
The computer turned text into sound!
Both are types of data, 1s and 0s moving in the brain

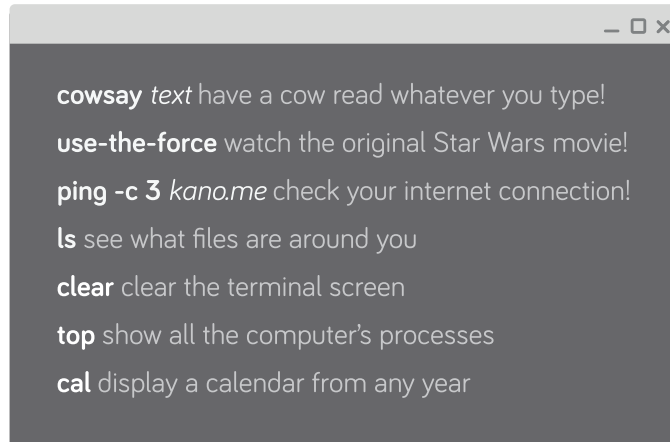We can make it say things in different voices too

```
user@kano ~ $ echo Hello World | espeak -v fr
```

The -v is an "argument," which lets you change how the command works.

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:

cowsay *text* have a cow read whatever you type!

use-the-force watch the original Star Wars movie!

ping -c 3 *kano.me* check your internet connection!

ls see what files are around you

clear clear the terminal screen

top show all the computer's processes

cal display a calendar from any year

When asked your password is **kano**

Go back to the desktop by clicking the cross in the upper-right corner
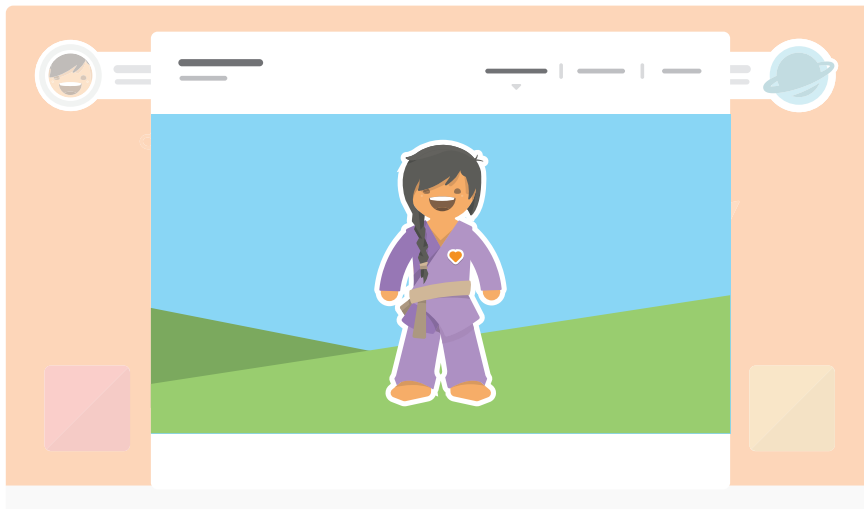
user@kano ~ $

Or the Home button at the bottom
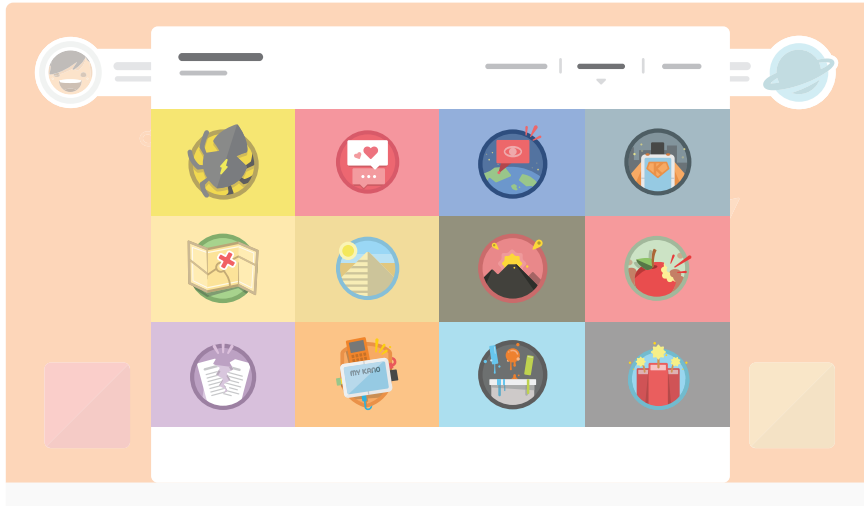
Now, let's talk about you

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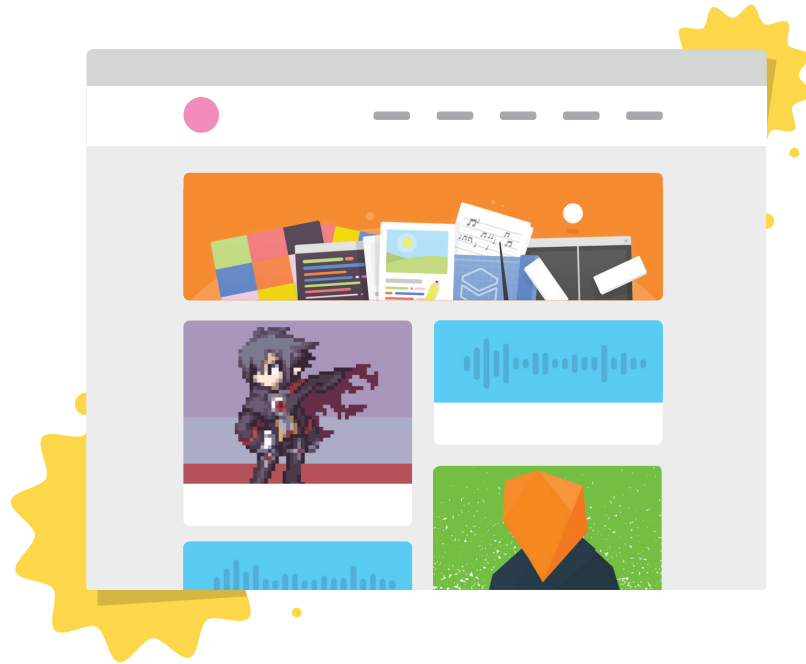
The more you play, the more you'll win!

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

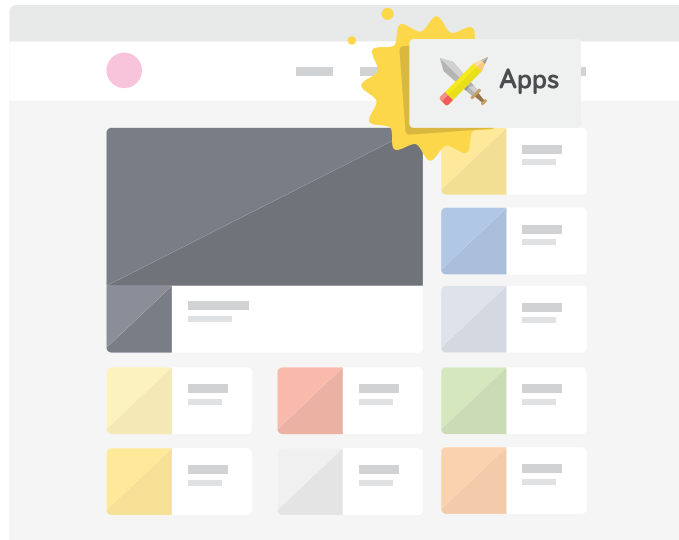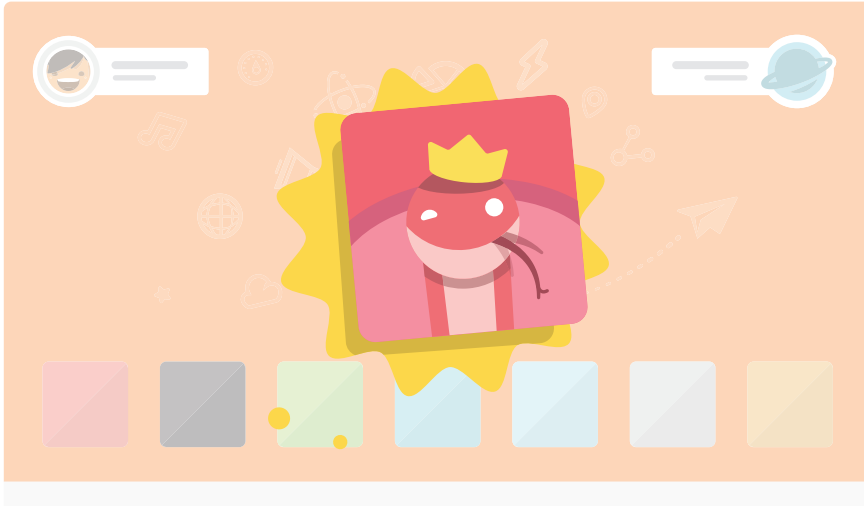Want to add new apps and share your creations?

Click on Kano World

See how you stack up against Kano creators around the world

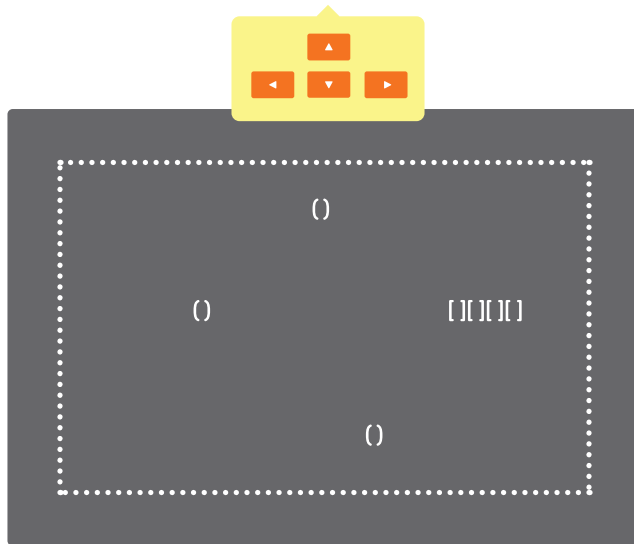You can download new apps from Kano World too

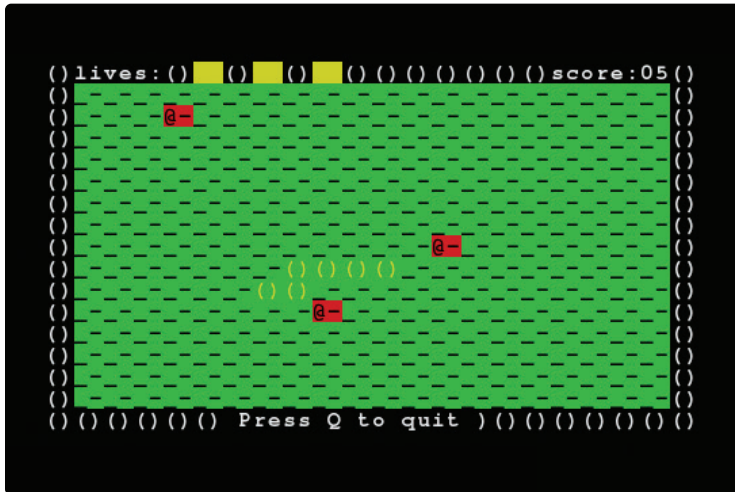The command line is great for coding games like Snake

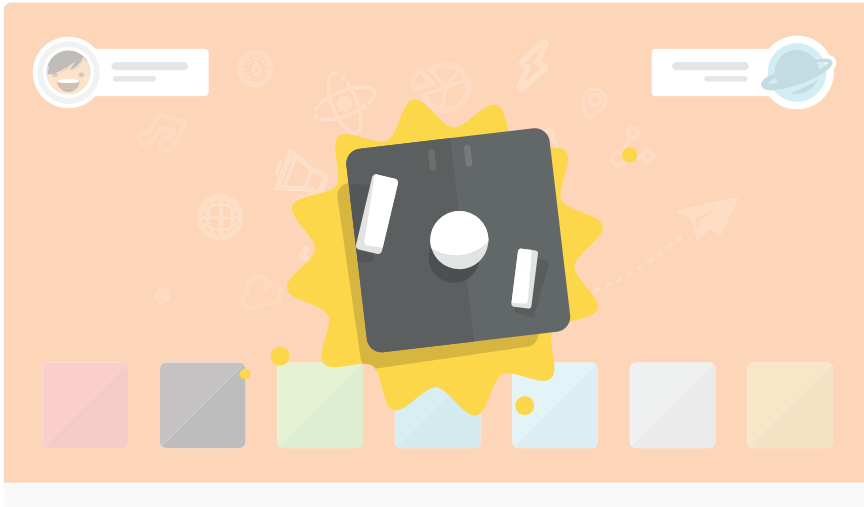

Click the icon to try it out!

Use the arrow keys to move

▲
◄ ▼ ►

()

() [][][]

()

Eat apples, but don't catch your tail!

Check out this amazing camoflauge snake game, made by **Zachary**

Go to **getkano.co/zacharykano** to try it!
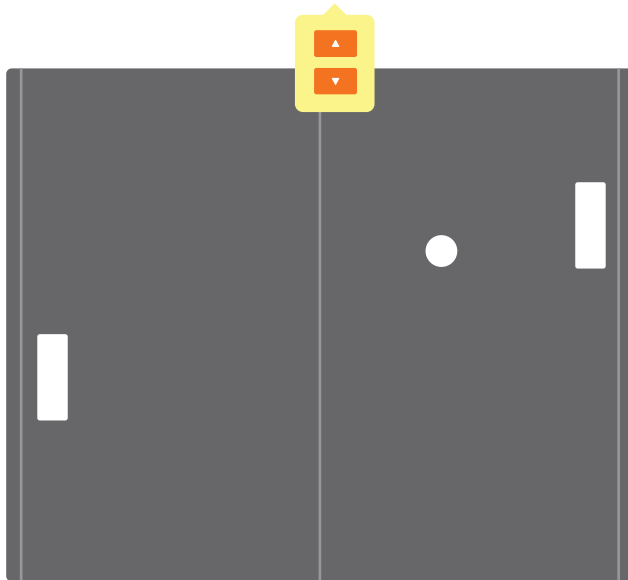
Now let's try Pong
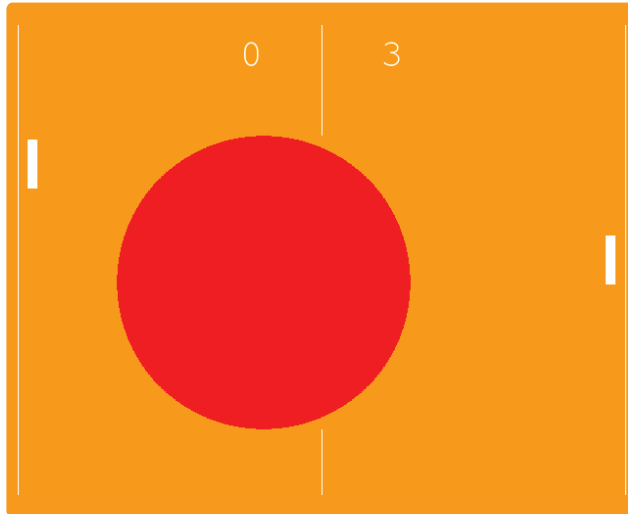
You can use blocks to change the rules
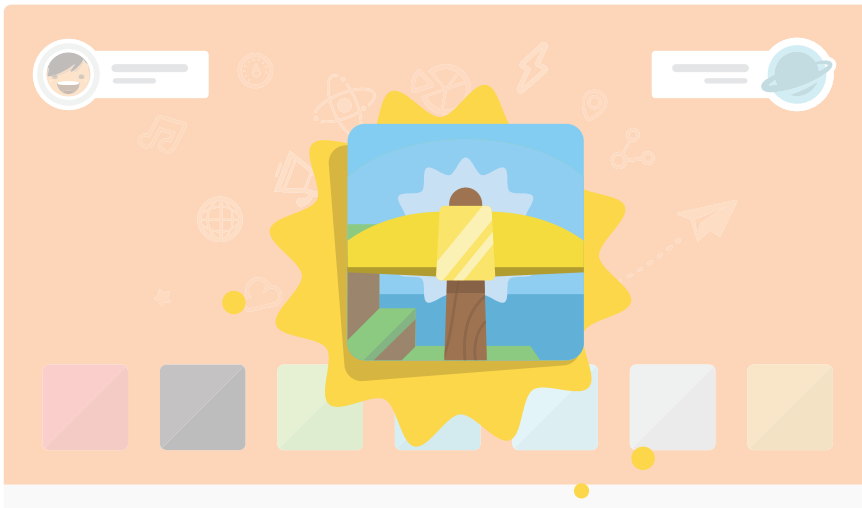
Press MAKE to play your game

Use the arrow keys to play

When you're ready to make Pong even cooler, press [esc]

Rescue your town from **RazorMaster**'s meteor strike!

Go to **getkano.co/razormaster** to try it!

Ready to code Minecraft?

Click the icon to get making

The top half of the screen is Minecraft - Creative Mode

In the bottom half, you'll use Kano Blocks to code the game yourself!
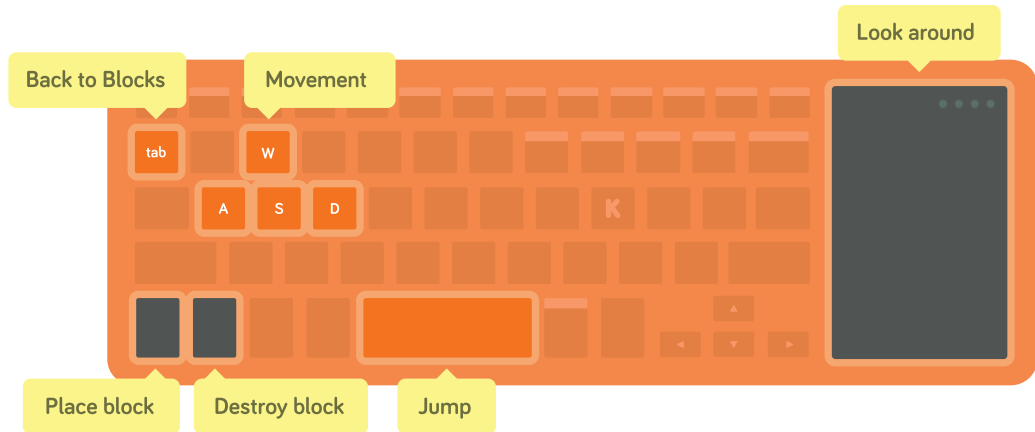
Make Minecraft has a secret...

Click 'CODE' to see the python you've created

Check out **Burkeboy**'s **frosty world** with diamond tunnels

Go to **getkano.co/burkeboy** to try it!

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

Look around

Back to Blocks

Movement

tab

W

A S D
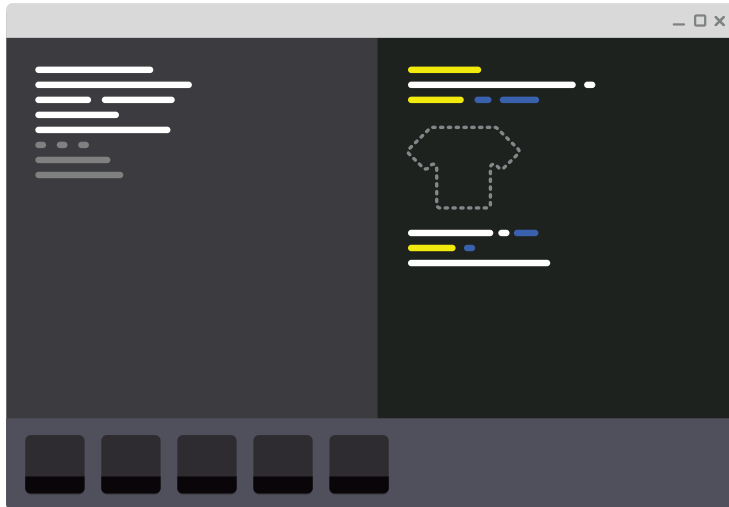
K

Place block

Destroy block

Jump

See what you can build!

Let's do Terminal Quest...
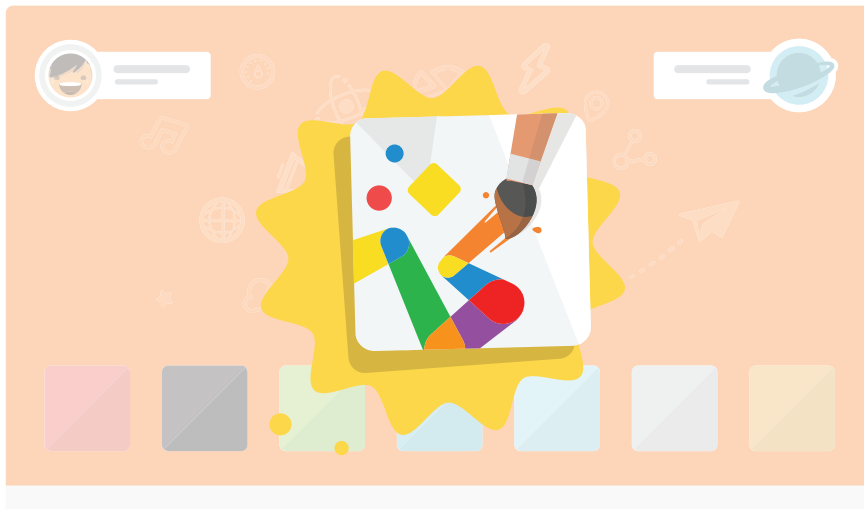
The left side tells the story...

...and the right side lets you play
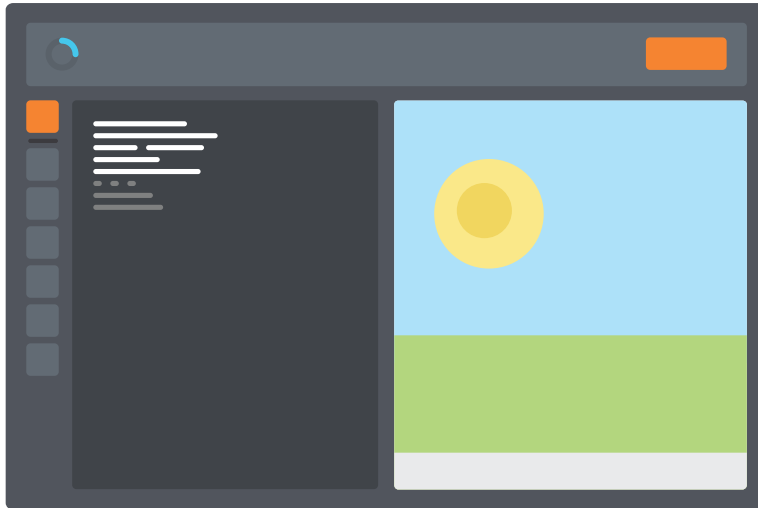
Complete chapter one to get a badge!

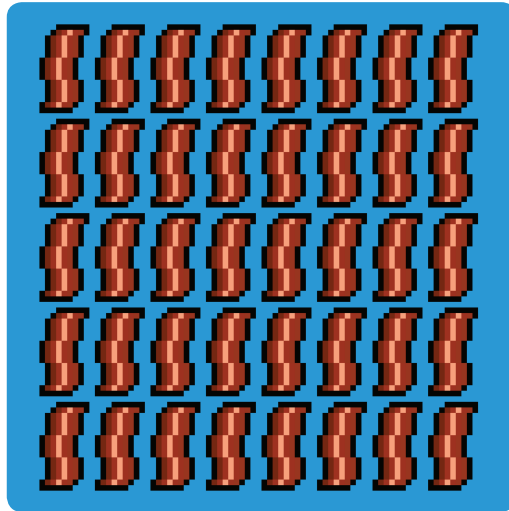
You're a Folderton Hero!

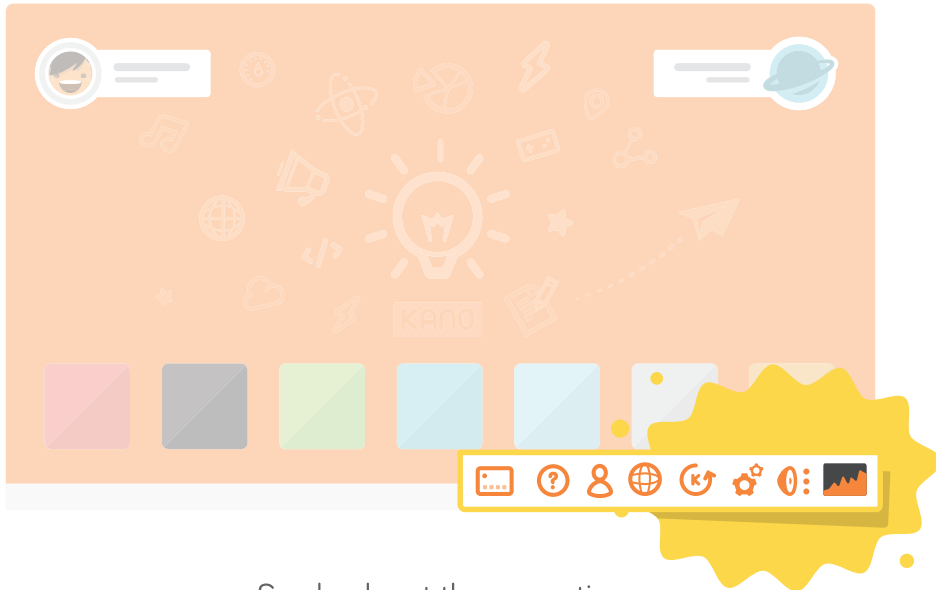Let's try Make Art

The left side is where you write your code

The right side shows your creation

Look at the beautiful art made by **awent0428**

Go to **getkano.co/awent0428** to try it!

You're almost a Kano Master...

So check out these pro tips

Home Jump back to desktop

Help Give us a shout if you're stuck

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!
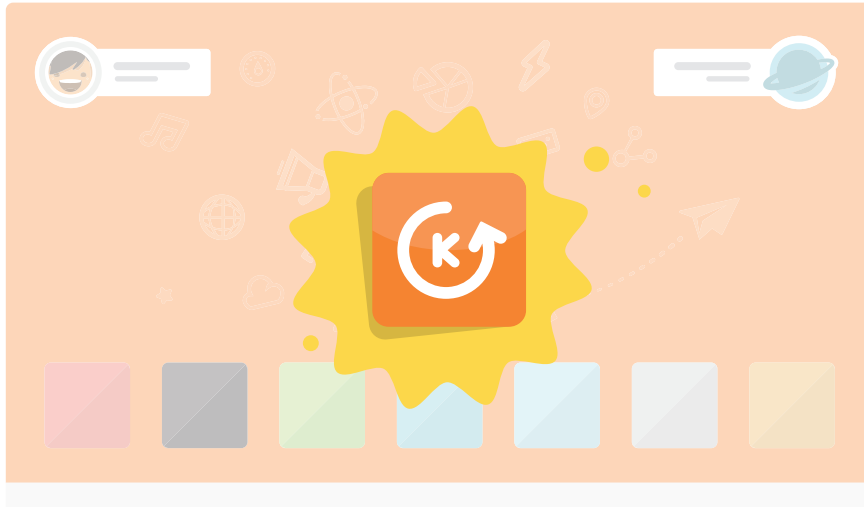
Settings Change your setup

Volume Keep it bouncing

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

And remember to keep your Kano up to date

By clicking this icon when it turns full orange

A Computer Anyone Can Make ™

Anyone Can Make ™

KANO