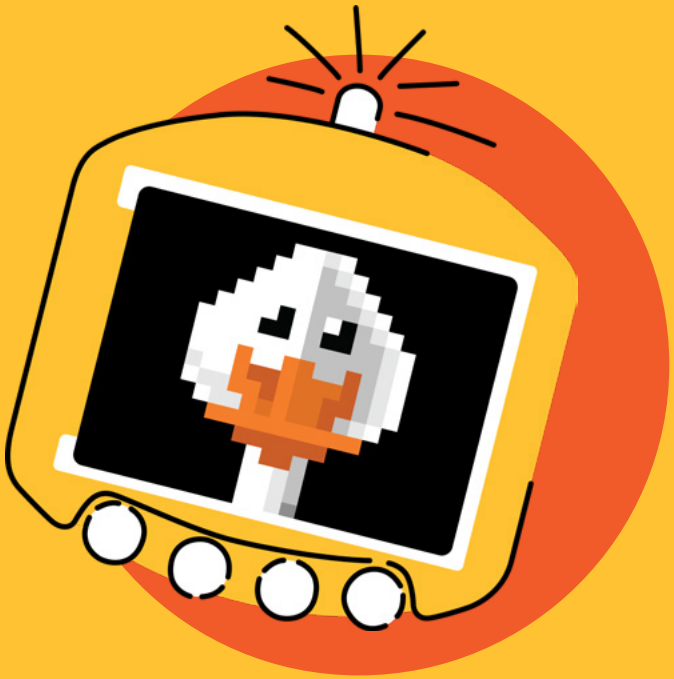
CREATOR'S BOOKLET



CircuitMess

Meet CircuitPet

CircuitPet is a DIY virtual pet similar to Tamagotchi. Like any other pet, you can play with it, take care of it, love it and help it grow!

To build your CircuitPet, go to: circuitmess.com/build

How does it work?

- Follow the online tutorials and assemble your CircuitPet
- Learn about real-time clocks and low-power technology
- Play with, take care of, and love your virtual pet duck
- Hook CircuitPet to a computer and code it

What is CircuitMess?

CircuitMess started in 2016 when Albert (our CEO) was 17 years old.

Albert loved tinkering with electronics and one of his first projects was a DIY game console.

People really liked the idea so he decided to launch it on **Kickstarter** where it raised $100,745!

After that, CircuitMess was born. We are a small and fast-growing team of tech lovers who wish to share our love of creating new technology with the rest of the world!

Behind the name

CircuitMess

a reference to electronic circuits — *what best describes our workplace*

All of our kits are designed, manufactured, and packed in Croatia!

The mission

Everybody knows how important technology is, but less than 1% of the population knows
HOW TO MAKE
new technology.

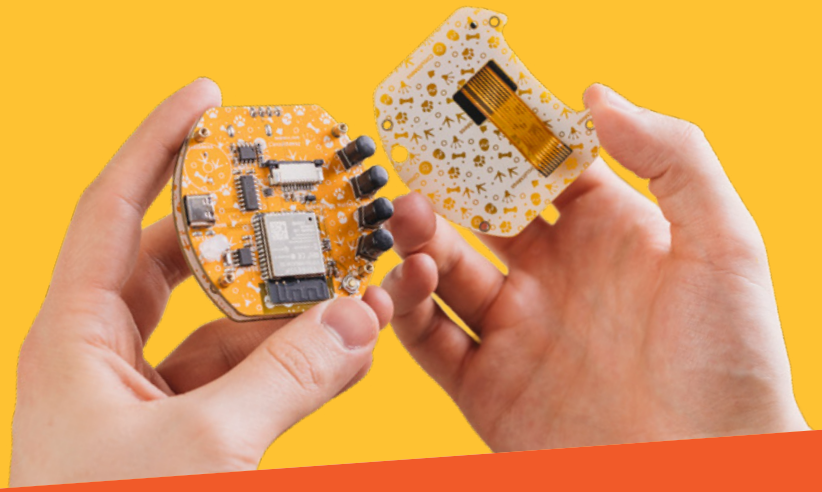
We're here to change that! With our kits, we want to inspire people to be
CREATORS
instead of just consumers.

What's inside the box?

1. Stickers
2. Yellow lanyard
3. Collector's card
4. Li–Po battery
5. Acrylic stand
6. Display board
7. Main circuit board
8. Back acrylic casing
9. Front acrylic casing
10. RGB LED
11. Resistors
12. USB–C cable
13. On–off switch
14. Male and female pin headers
15. Pushbuttons
16. Button caps
17. Metal bolts
18. Brass spacers

You'll learn about hardware

- Soldering & hardware assembly
- RTC (real–time clocks)
- Microcomputers and other electronic components
- TFT LCD displays



You'll learn about software

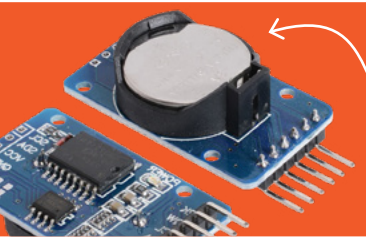
- Coding in C++ & CircuitBlocks
- Low power & always–on technology
- Embedded programming
- Video game mechanics

What is a real–time clock?

If you ever wondered how your phone or computer knows what time it is — it's all thanks to an RTC.

A real–time clock (RTC) is an integrated circuit that measures the passage of time.

An RTC is usually connected to an alternate power source so that it can keep tracking time even when the device it's in is not powered on.

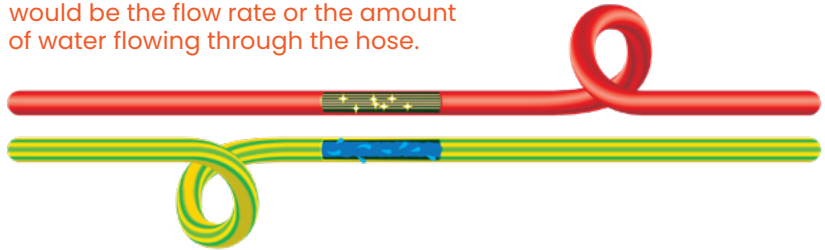


Because an RTC has a very low power consumption, this alternate source of power is usually a small lithium battery just like the one you can usually find inside a watch.

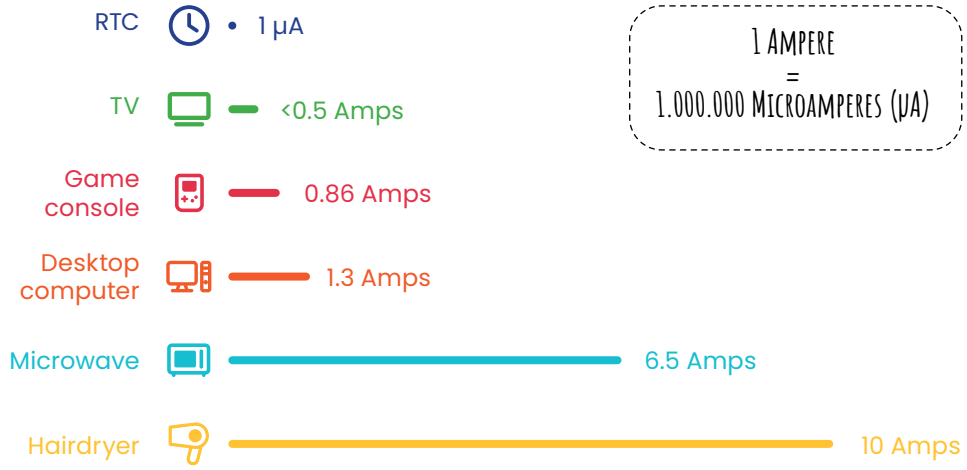
How to measure electric current?

An ampere (amp) is a measure of the electric current. It is the amount of electric charge in motion per unit time.

Electricity flows in a similar way to water flowing through a hose. Electric current in this example would be the flow rate or the amount of water flowing through the hose.



How many amps does an RTC use?



1 Ampere = 1.000.000 Microamperes (µA)

What are virtual pets?

A virtual pet is an artificial human companion that lives inside of a device.

Even though it is virtual, it requires just as much care and attention as real–life pets do.

Most virtual pets start off as babies that you have to take care of and help them grow into a healthy, full–grown pet.

The rules are simple. Feed and care for your pet and it will thrive. Neglect it and it will become dirty and sick.

A brief history of virtual pets

1995
PF Magic releases Dogz — the first widely popular virtual pet game

1996
Akihiro Yokoi and Aki Maita make Tamagotchi

1997
Virtual pet craze takes off!

1997
Digimon

1998
Hey you, Pikachu!

1999
Neopets

2005
Nintendogs

2010
Kinectimals

2012
Pou

2013
Talking Tom

2022
CircuitPet — Build & code your own virtual pet

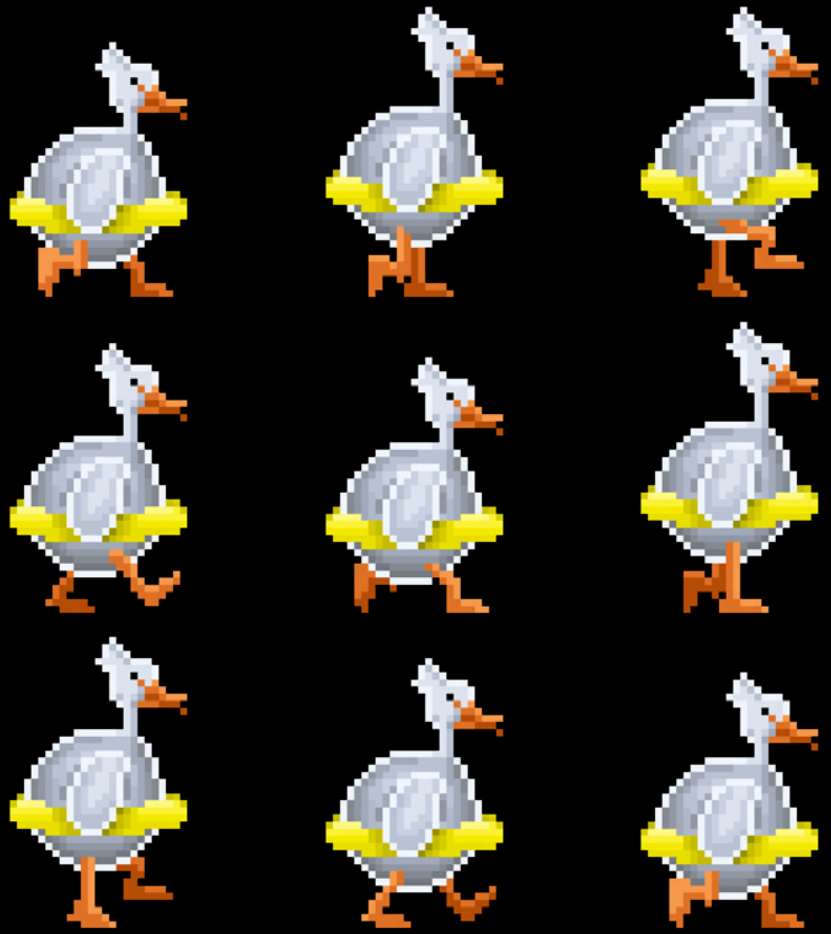
Tamagotchi effect

Just like real–life pets, virtual pets require constant attention and care. While taking care of someone (or something) for a while, especially a super–cute pet, some kind of an emotional connection is bound to happen.

This type of an emotional attachment to a machine, robot or software is called the Tamagotchi effect.

Did you know?

Tamagotchi got its name from the Japanese words for egg "tamago", and watch "uotchi".



Duckileo's walk cycle

Pixel Art

Let's check some key definitions in the world of **Pixel Art!**

The pixel is the basic unit of programmable color on a computer display or in a computer image.

> *The frame rate is the rate at which a number of frames appear within a second. The unit of measurement we use is* ***fps (frames per second).***

The standard frame rate of **24fps** is used in movies, streaming video content, and even smartphones.

Anything higher than 30fps is mainly used to create slow-motion video or to record video game footage.

The art of bringing otherwise inanimate objects or illustrated / 3D-generated characters to life is known as animation.

It is created by rapidly projecting **sequenced images** one after the other to create the illusion of life.

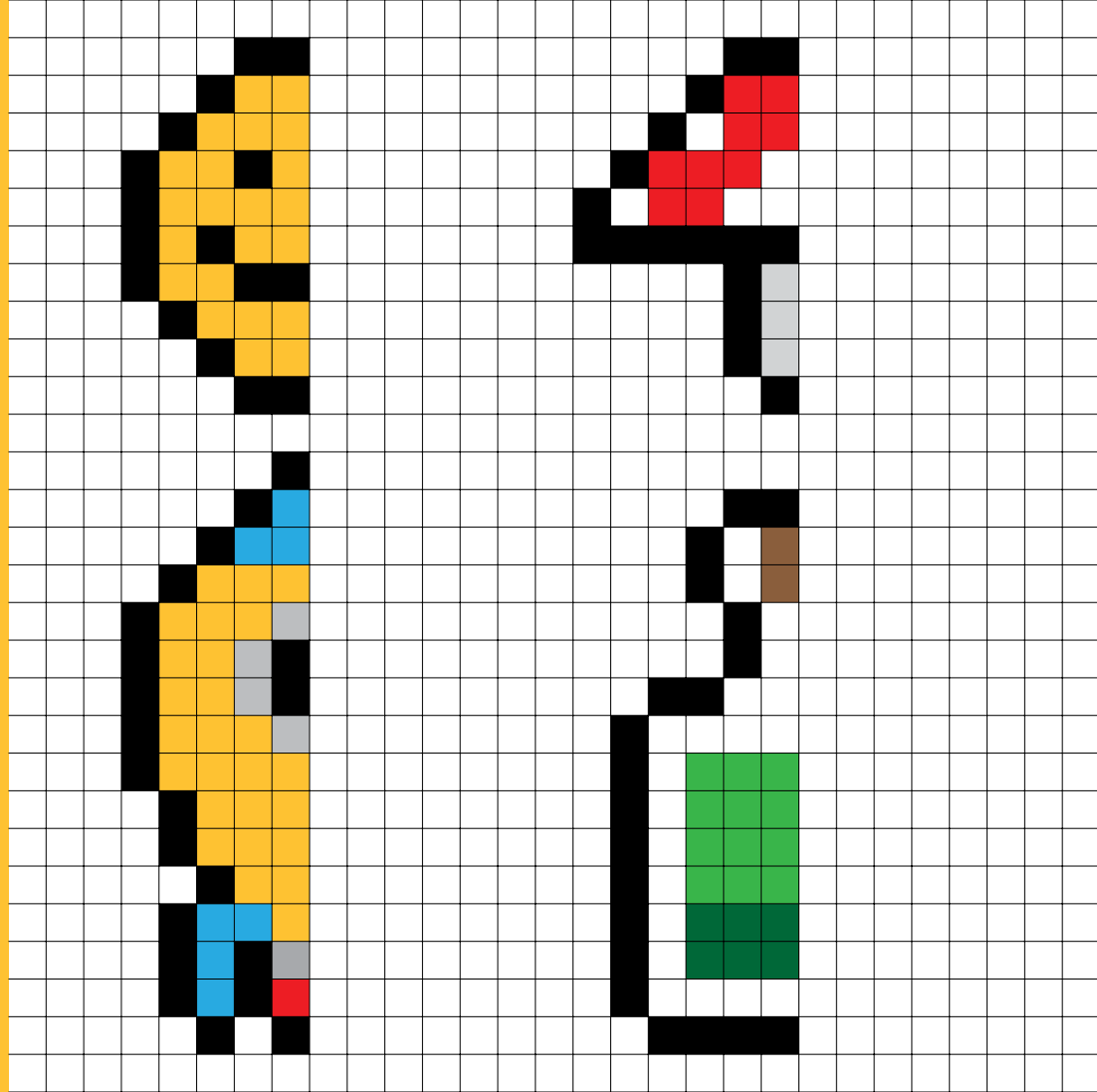
Pixel art is a type of digital art created with graphical software in which images are built entirely from pixels.

Pixel art was born in the 1970s, and some of the earliest examples were simply squares and rectangles.

SuperPaint was the precursor to modern graphic programs like Photoshop, and it was used by NASA as a way to illustrate its discoveries and data.

As the quality of the softwares improved over time, pixel art saw a decline and then a revival of its 8–bit values.

Try it yourself!
Finish the drawings by painting in the squares.



Meet Duckileo Quackilei

Galileo Galilei discovered what planets look like, but Duckileo has even bigger dreams.

This brave robot duck is on a mission to discover the whole universe. Help him achieve his dreams by playing custom games to level up and launch him into the stars.

Watch him become an astronaut & boldly waddle where no duck has waddled before!

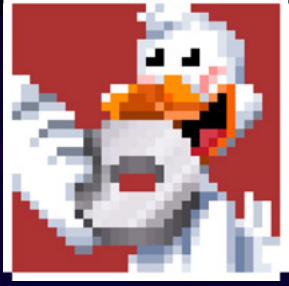
- Collect XP with fun minigames
- Keep your pet happy
- Keep the rust away
- Level up Duckileo

Your CircuitPet comes with 6 Pre-loaded Mini-games

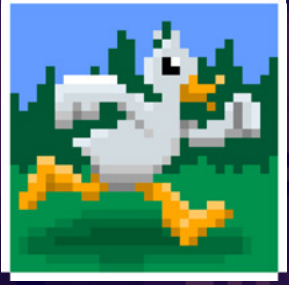
Oil I need

Flop away

Quack snack

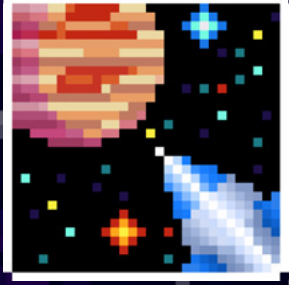


Duck & jump



So you think you can waddle?

Spaceduck



Safety first!

Before you start with the assembly, pay attention to the following safety measures:

1. Handling a soldering iron and a screwdriver is **not recommended for children under the age of 9!**
2. **Keep CircuitPet away from young children!** This product contains small components that are dangerous to children under the age of 3.
3. If you are a minor, assemble CircuitPet strictly with the help of an adult.

CircuitPet is not a toy for toddlers.

Closely follow all the instructions you received in this kit and those found on our online pages so that no one gets hurt.

If you have never used a soldering iron or a screwdriver, carefully follow the assembly instructions on our website and, if necessary, ask someone more experienced or older than you to help you.

If you are having problems with our kit, contact our customer support via email at contact@circuitmess.com.

Happy soldering!

To build your CircuitPet, go to:

circuitmess.com/build

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