CREATOR'S BOOKLET

CODEE

CircuitMess

WACKY ROBOTS

Scan the QR code for instructions in your language

Wacky Robots are a quirky group of mini-robots that will help you master the basics of robotics and electronics.

UNLOCK ALL VIDEO GAMES

Meet Codee

Codee 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!

How does it work?

- Follow the online tutorials and assemble your Codee
- Learn about real–time clocks and low–power technology
- Play with, take care of, and love your virtual pet penguin
- Hook Codee 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. Acrylic casing
2. Circuit board
3. Bolts
4. Screwdriver
5. Lanyard
6. Spacers
7. Stickers
8. Battery holder
9. Batteries

You'll learn about:

- Low-power technology
- Real-time clocks
- Embedded programming
- Video game mechanics

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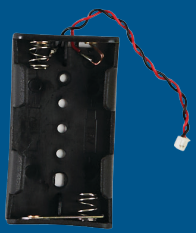

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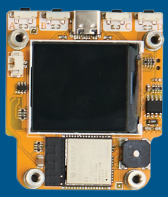

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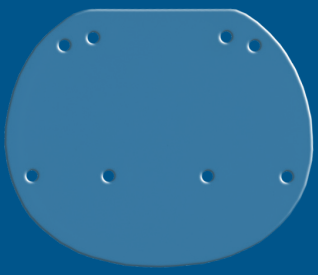
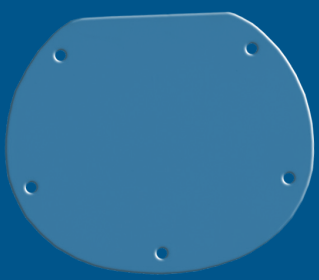


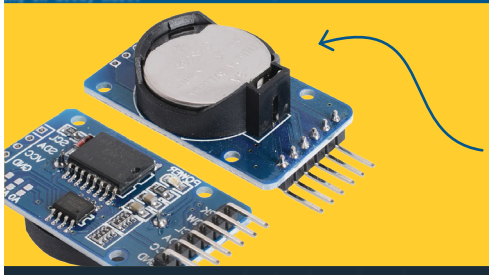


What is a real–time clock?

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.

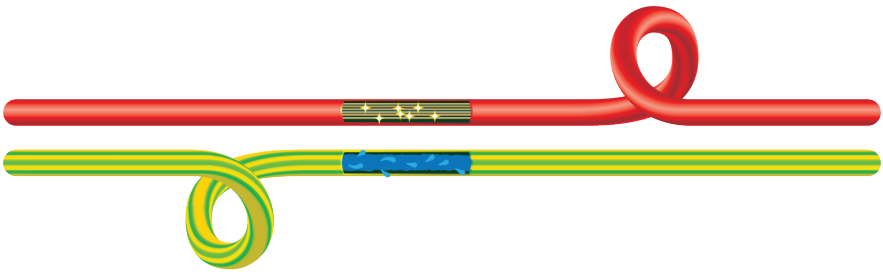


Because an RTC has a very low power consumption, this alternate source of power is usually a small lithium battery just like the one you can usually find inside a watch.

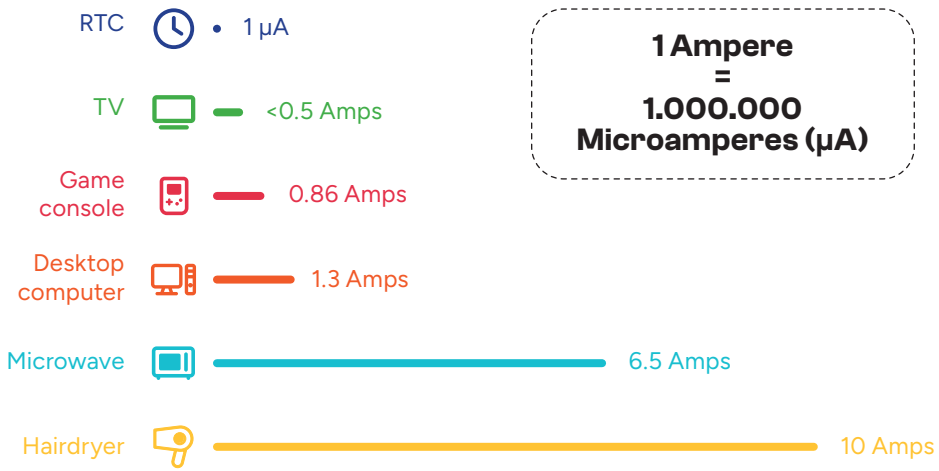
How to measure electric current?

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

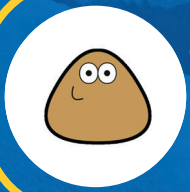
1998

Hey you, Pikachu!

1999
Neopets

2005
Nintendogs

2010
Kinectimals



2012
Pou

2013
Talking Tom

2024
Codee — 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".

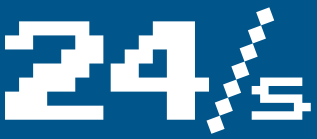
Codee's walk cycle

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.

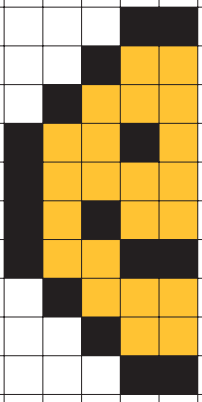
Pixel art is a type of digital art created with graphical software in which images are built entirely from pixels.

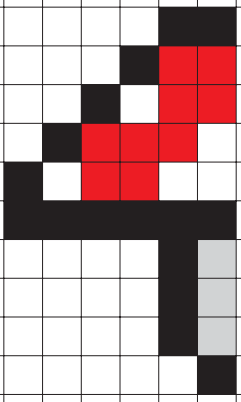
Pixel art was born in the 1970s, and some of the earliest examples were simply squares and rectangles.

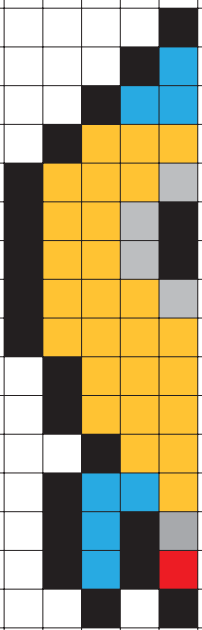
SuperPaint was the precursor to modern graphic programs like Photoshop, and it was used by NASA as a way to illustrate its discoveries and data.

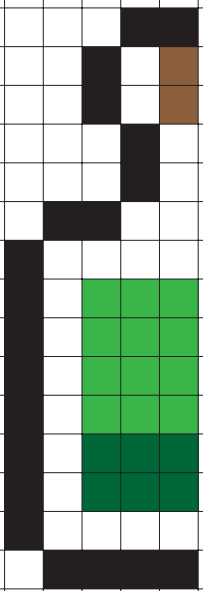
As the quality of the software improved over time, **pixel art** saw a decline and then a revival of its 8–bit values.

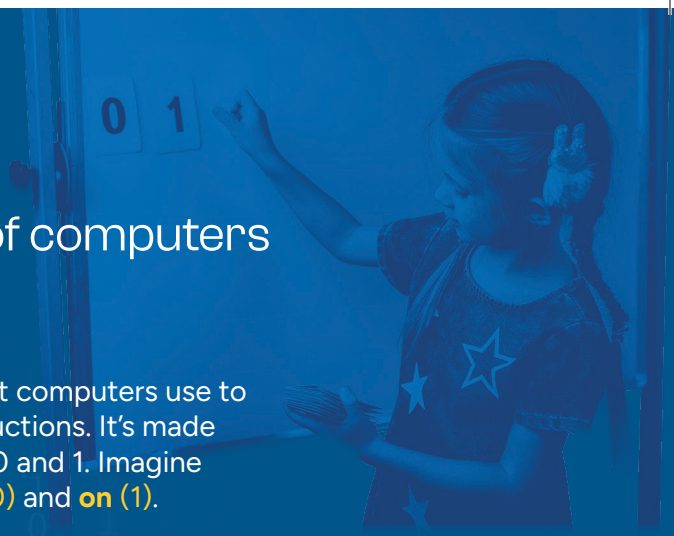
Try it yourself!
Finish the drawings by painting in the squares.









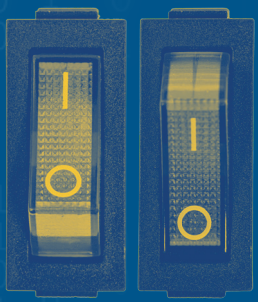


Binary
- the language of computers

What is binary?

It's a special language that computers use to talk and understand instructions. It's made up of only two numbers: 0 and 1. Imagine it like a light switch: **off** (0) and **on** (1).

The switch is in the "on" position and it means that it is "1".



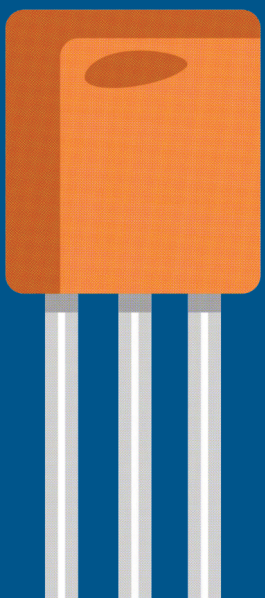
The switch is in the "off" position and it means that it is "0".

Where is binary code used?

1. Computers

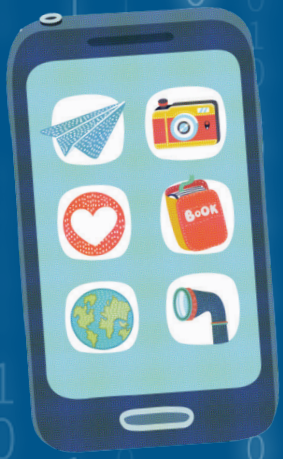
When you play games, watch videos, or write stories on a computer, binary code is hard at work! **Every letter, number, picture, and sound is converted into zeros and ones** so the computer can understand it.

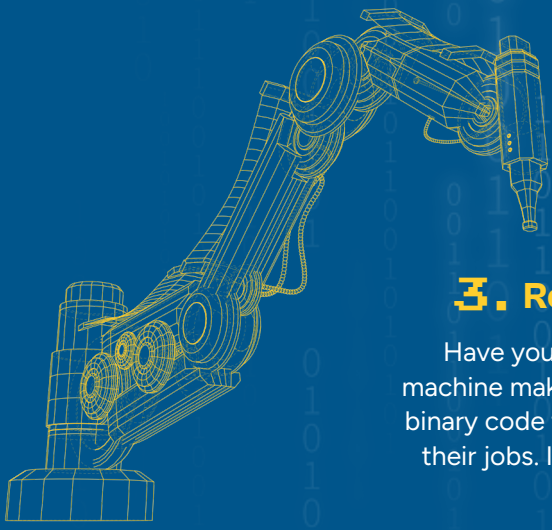
Computers are made of tiny switches called **transistors**. These switches can either be off (0) or on (1). By combining these switches, computers can do lots of cool things like play games, show pictures, and even help astronauts in space!



2. Smartphones and Tablets

Your favorite apps and games on your tablet or smartphone also speak binary. They use binary code to show you pictures, play music, and let you chat with friends.





3. Robots and Machines

Have you ever seen a robot move or a machine make something? They, too, use binary code to follow instructions and do their jobs. It's like their secret language!

4. The Internet

When you go online to explore new things or watch funny cat videos, binary code is working behind the scenes. It helps send information from one place to another, like magic!

How does it actually work?

Each binary digit (we call them bits) represents a different value.

Here's how you count from 0 to 10 in binary:

decimal	binary
0	0
1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001
10	1010

Write your age in binary!

If you're 8 years old, it's 1000 in binary.
Cool, right?

Meet hexadecimal
- the colorful code

Hexadecimal (we call it „hex“ for short) is another way to represent numbers. It uses 16 symbols: 0-9 and the letters A-F.

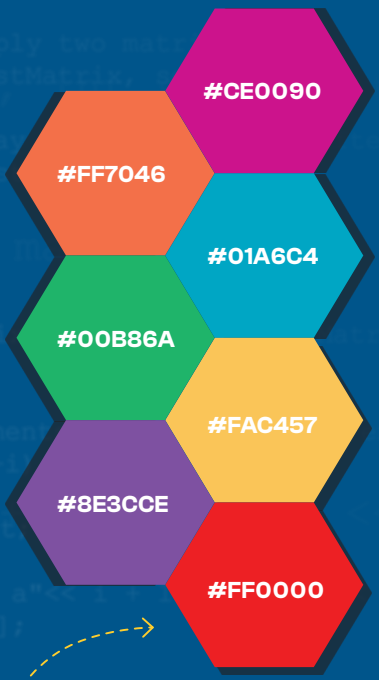
Why do we use hex?

Hex is super handy when dealing with lots of binary numbers. It makes them shorter and easier to read. It’s like a secret code for programmers!

How does hex work?

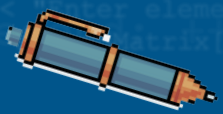
Each hex digit represents **four binary digits - bits**.
Let's look at the numbers 0 to 15 in both binary and hex:

decimal	binary	hex
0	0	0
1	1	1
2	10	2
3	11	3
4	100	4
5	101	5
6	110	6
7	111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F



Colors in hex!

When you see colors on your screen, they're often shown in hex.
For example, the color red is #FF0000 in hex!



Try it out!

What's the hex value for the number 10? It's A.

Can you figure out the hex value for the number 12?

Write in secret code!

Now that you know how to convert letters into binary and hexadecimal codes, you can **create secret messages** to share with your friends! Imagine passing notes that only you and your friends can read because they are written in a special code.

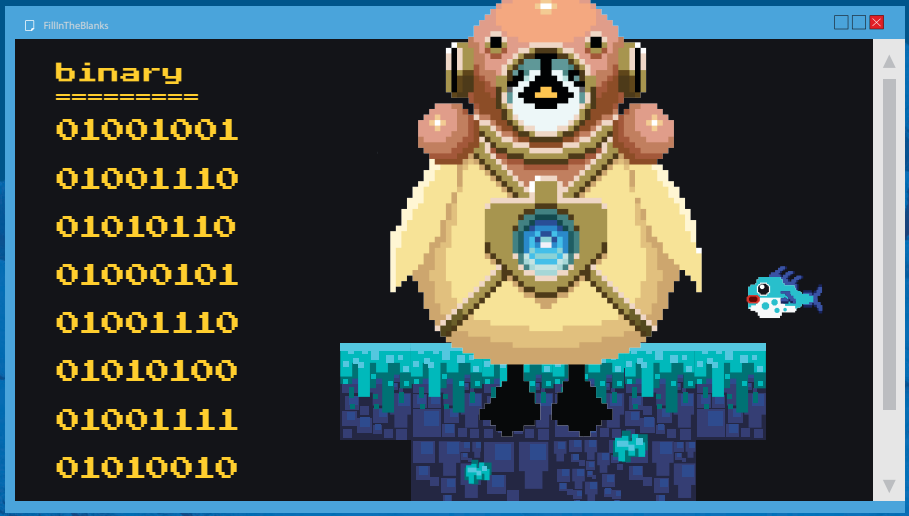
It's like having your own language!

We are sharing a secret alphabet with you, so share it only with your besties!

A 01000001	B 01000010	C 01000011	D 01000100
E 01000101	F 01000110	G 01000111	H 01001000
I 01001001	J 01001010	K 01001011	L 01001100
M 01001101	N 01001110	O 01001111	P 01010000
Q 01010001	R 01010010	S 01010011	T 01010100
U 01010101	V 01010110	W 01010111	X 01011000
Y 01011001	Z 01011010		

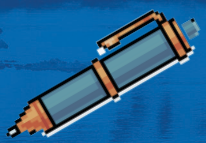
Try it out!

Fill in the blanks



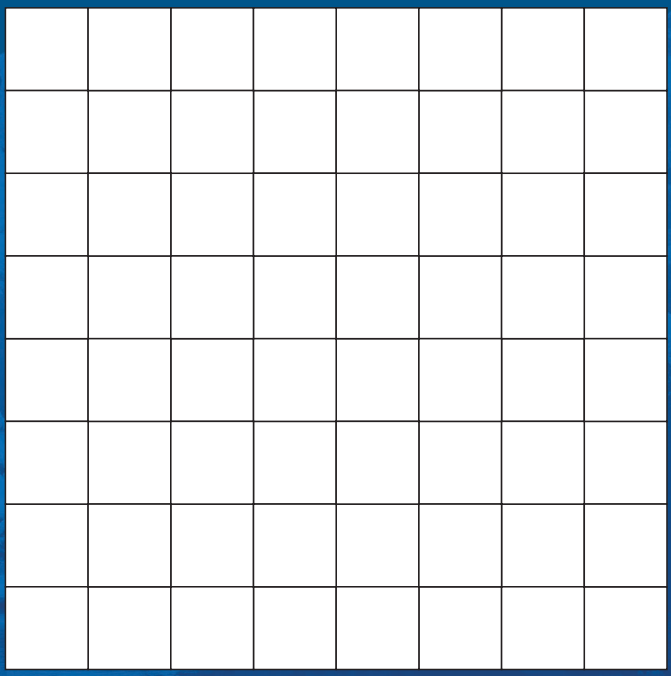
Do it yourself!

Can you write your own name in binary code?
We believe in you!



Discover the hidden image

Fill in the blanks! Every 0 needs to be left white, and every 1 needs to be filled in.



binary
00111100
01000010
10100101
10000001
10100101
10011001
01000010
00111100

Your Codee comes with 6 Pre–loaded Mini–games

Oil I need

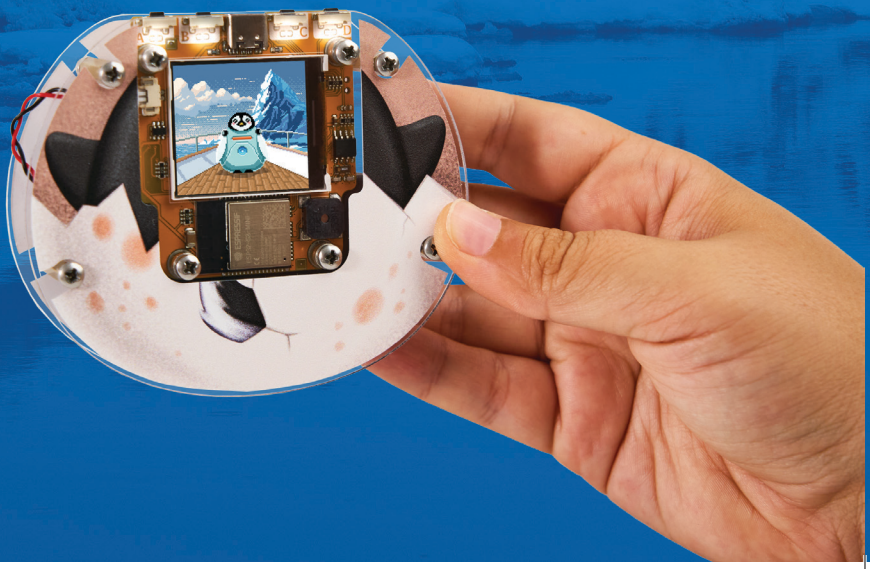
Arctic swim

Pingo snack

Polar jump

So you think you can waddle?

Ocean arcade



Safety first

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

1. Handling a screwdriver is not recommended for children under the age of 7!

2. **Keep CircuitMess Codee 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 Codee strictly with the help of an adult.

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

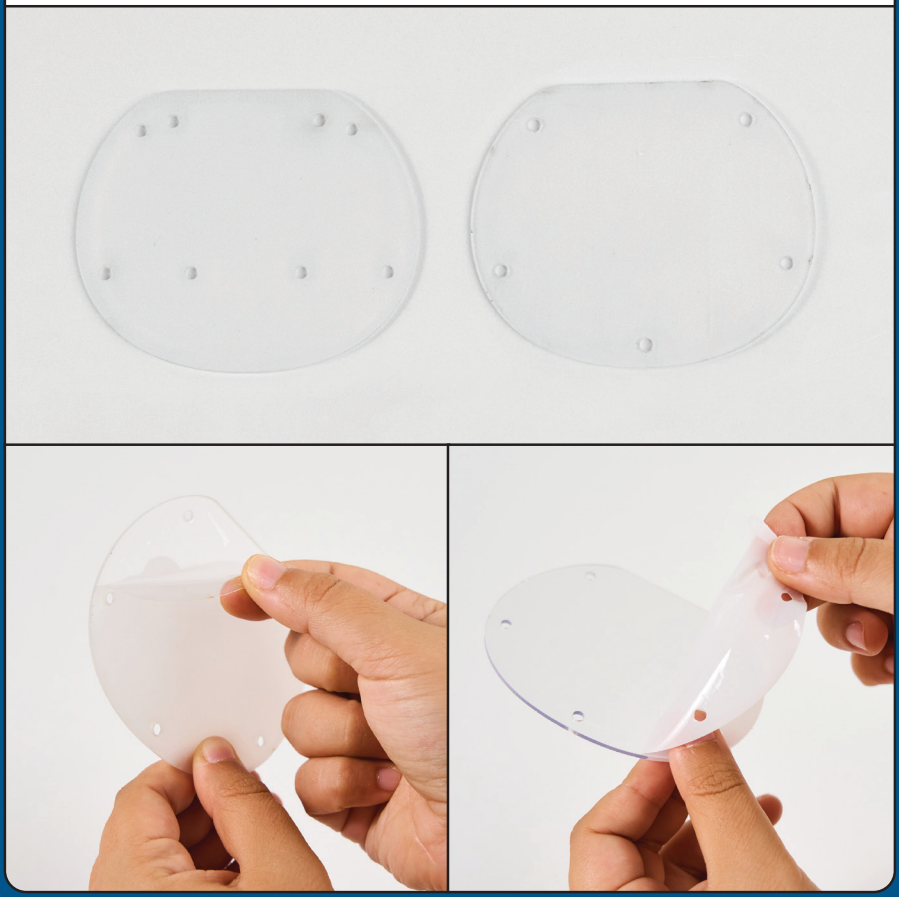
If you have never used a screwdriver, carefully follow the assembly instructions on our website and, if necessary, ask someone more experienced or older than you to help you.

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

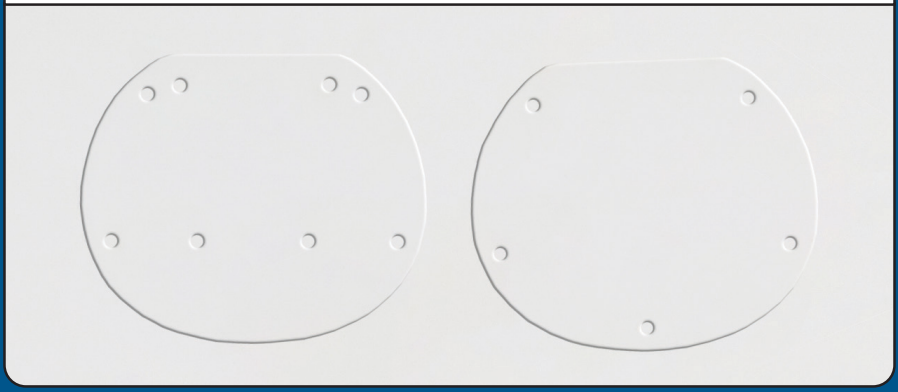
Welcome to the Codee Build Guide!

Get ready to **assemble** your new virtual pet step-by-step. Let's dive in!

Start by **removing the protective foil** from both sides of each of the two acrylic casings.

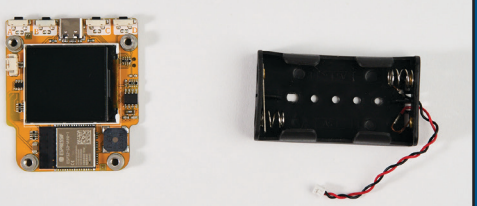


Once you're done, they should be shiny and **transparent**.

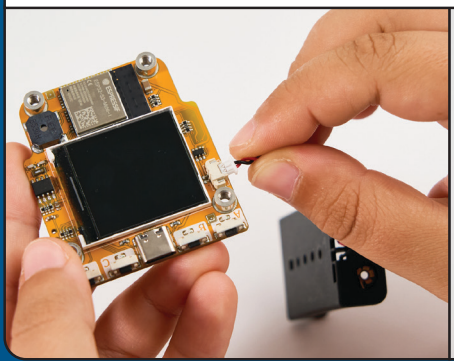


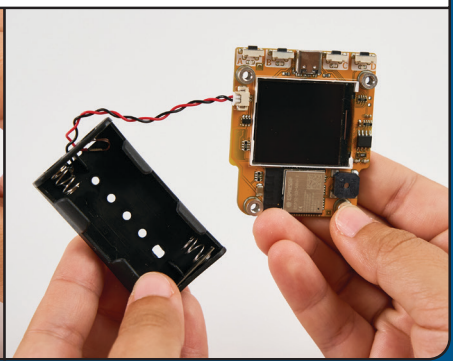
Next, we need to **connect the battery holder to the PCB**. This step ensures that Codee will be brought to life once the batteries are in place.

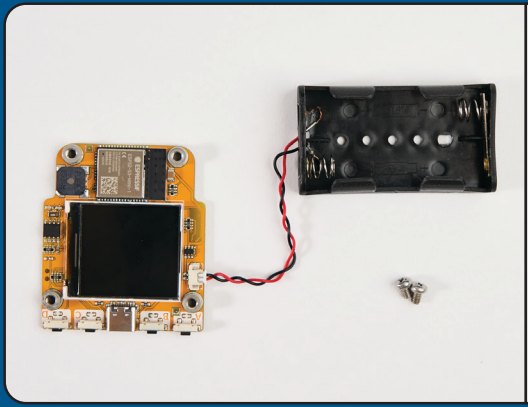
Take these two components:



Connect them as shown:

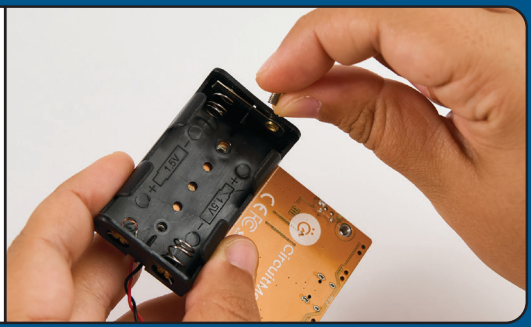




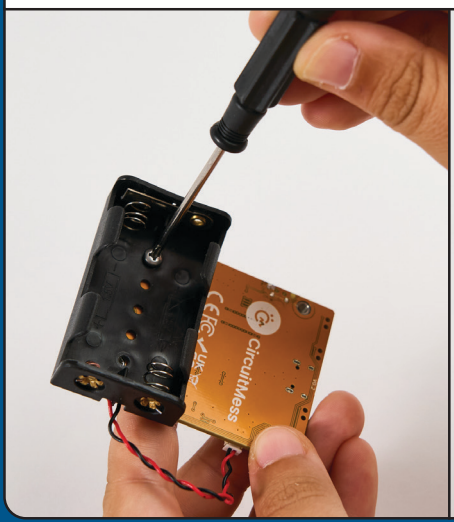


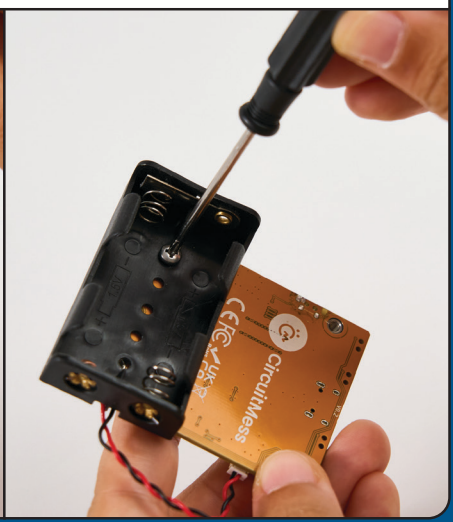
To prevent the holder from shifting, secure it to the PCB using **two screws**.

Insert the screws from inside the battery holder:

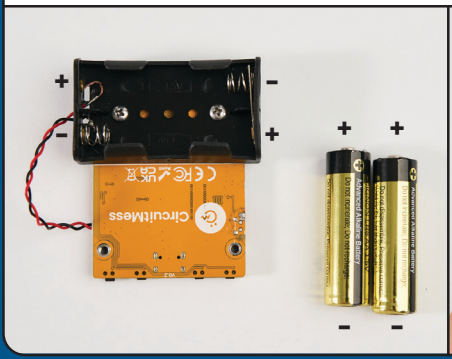


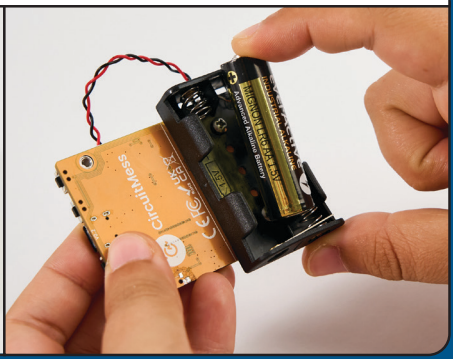
Use a screwdriver to tighten them:





Place two **batteries** into the holder, making sure to align the **polarities (+ and -)** correctly. The battery holder and batteries will have clear + and - indicators.





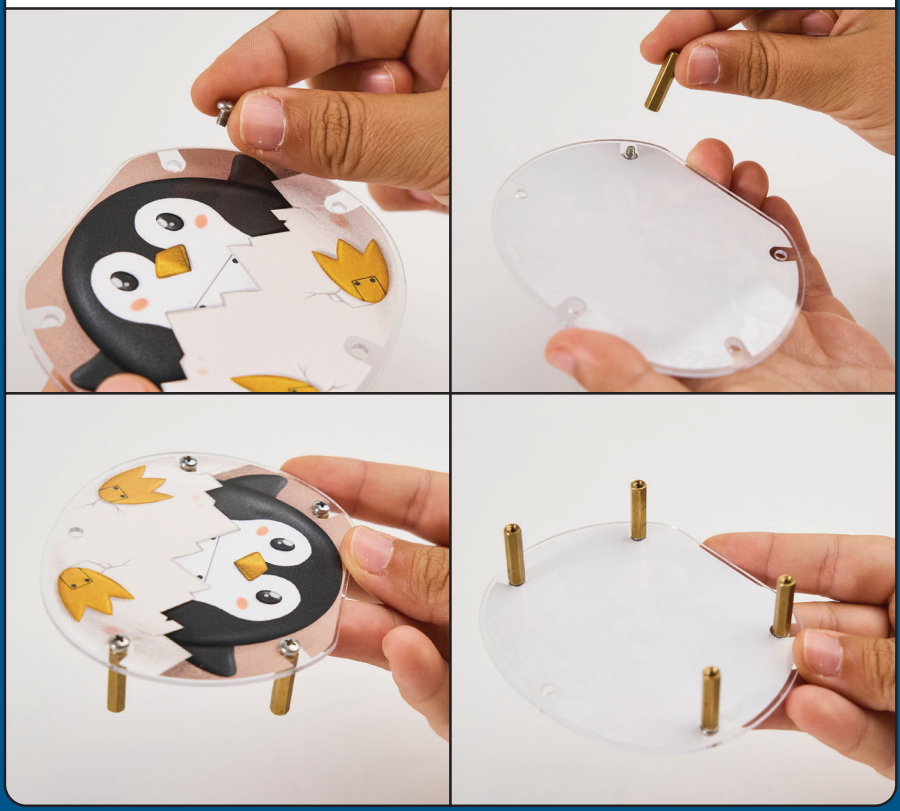
Personalize Codee with fun stickers!

Choose any pair you like and stick them on the designated side of the casing.

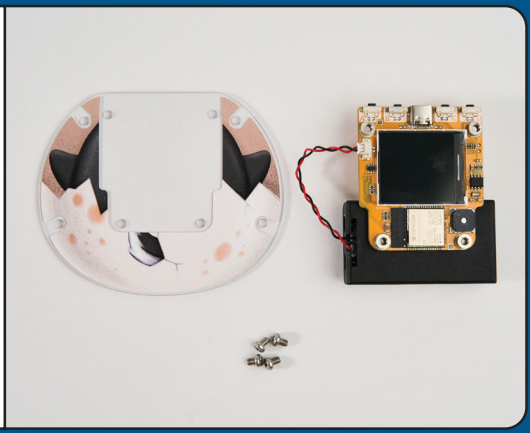
Just be careful to put the sticker on the right side of the casing.

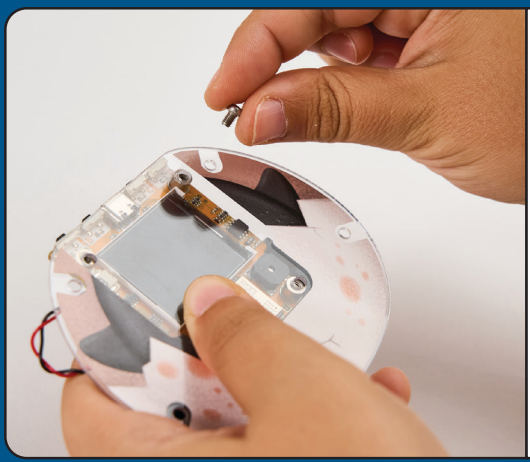
Next, attach **screws and spacers** to the back casing so you can connect it to the PCB. Use these parts:

Secure the casing by placing screws from the front side and fastening them with spacers on the reverse side:



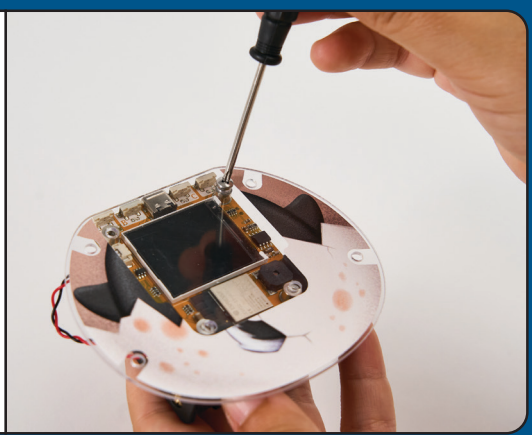
Now take what will be the front casing, the PCB, and the four screws.



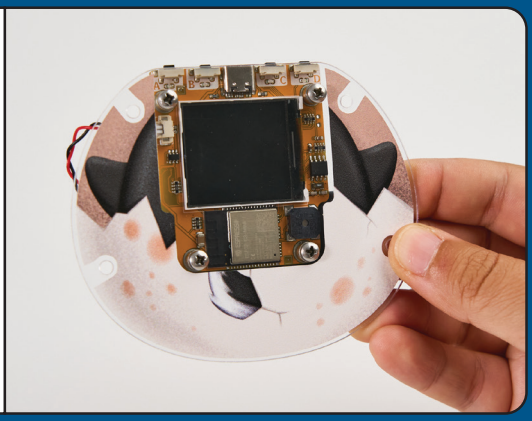


Align the front casing with the PCB to ensure the display is visible. Insert four screws from the outer side of the casing:

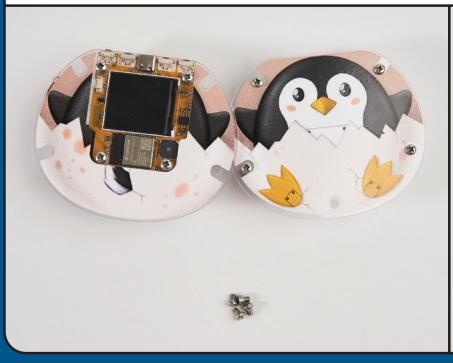
Use a screwdriver to secure them:

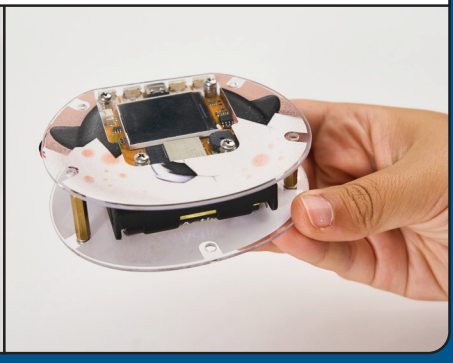


The front and PCB connection should look like this:

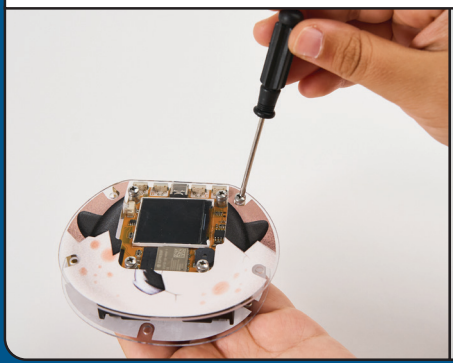


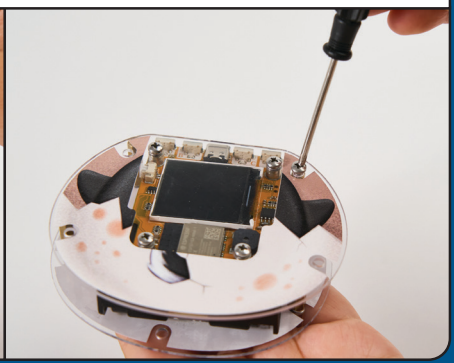
For the final assembly, **connect the back side** using four more screws:





Secure them with a screwdriver:





Congratulations!
You've successfully assembled your Codee. It should look like this:

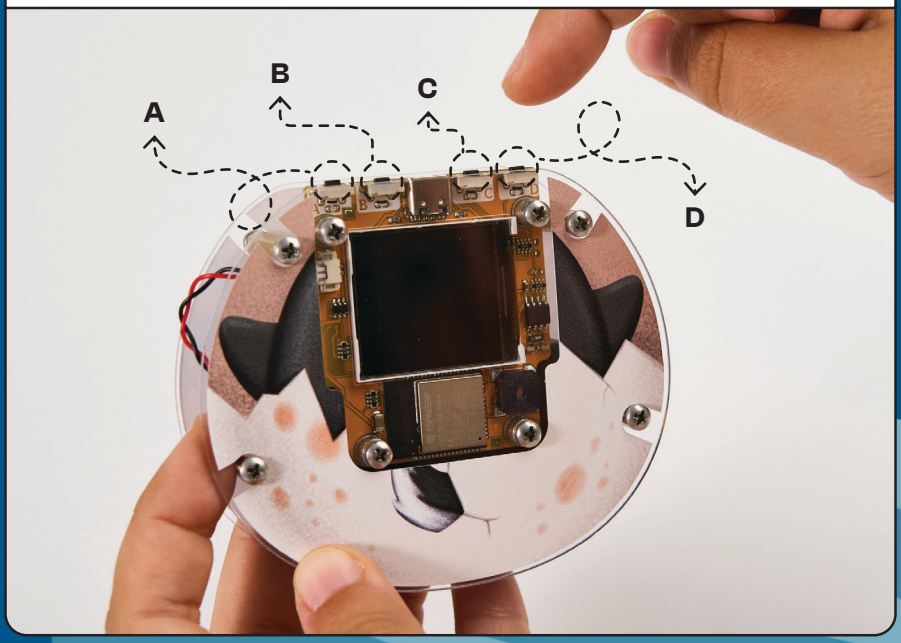
If you'd like to wear your Codee around your neck, attach the strap as an optional finishing touch.

Enjoy your new virtual pet!

How to use your Codee?

Codee will constantly be in sleep mode if you are not using it, and you can press any button to turn it on.

The buttons also serve these functions:
A - navigate to the right
B - navigate to the left
C - Enter
D - Exit



We hope you had fun building your new virtual pet!

WARNING:
This toy produces flashes that may trigger epilepsy in sensitised individuals.

⚠ **WARNING: CHOKING HAZARD - Small parts.** Not for children under 3 years.

Thank you for purchasing CircuitMess Codee Educational kit

For more information and detailed instructions on assembling and using your device, visit our official website: circuitmess.com/resources/guides

Important safety information for CircuitMess Codee

Read all safety information before using the device.

WARNING: Failure to follow these safety instructions could result in fire, electric shock, injury, and damage to your device or other objects. Read all safety information before assembling and using this device.

This product is a do–it–yourself device, and for it to work properly, you must assemble it according to the instructions you'll find on our website.

If you are a minor, assemble it only under an adult's supervision to avoid potential risks.

CircuitMess Codee kit contains sensitive electronic components. CircuitMess Codee or its components may be damaged if dropped, burned, punctured, crushed, or in contact with liquid. If you suspect that any part of your CircuitMess Codee kit (especially the batteries) is damaged, stop using the device. Using a damaged device may cause injury.

Use only authorized accessories compatible with your device and/or the supplied tools.

The device's operating temperature ranges from 0 ° C ~ 40 ° C.

Using this device in conditions outside this temperature range may damage the device.

Please turn off CircuitMess Codee after use and store it in a safe and dry location.

The included battery must be recycled appropriately and/or disposed of separately from household waste.

Improper handling of batteries can cause a fire or explosion. Dispose of or recycle

your device, battery, and accessories according to local regulations.

The included battery is NOT rechargeable.

• Do not short–circuit the battery

• Improper use of the battery can cause overheating, burns, or other injuries.

• Do not leave the battery directly exposed to intense sunlight.

• Do not use the device or the battery in high–temperature conditions. Overheating may cause an explosion.

• Do not disassemble or damage the battery to avoid battery leakage, overheating, or explosion.

• In the case of deformation, stop using the battery immediately and dispose of it properly.

If you are not sure whether your device or the included battery is safe to use, turn off the device, put it in a safe place, and contact our customer support via email at contact@circuitmess.com.

Keep the device dry.

Do not attempt to repair the device by yourself.

If any part of the device does not work correctly, contact our customer support (contact@circuitmess.com) or take your device to a certified repair shop.

Connect other devices according to their operating instructions. Do not connect incompatible devices to this device.

Precautions

During prolonged use, Codee may rarely overheat.

Keep CircuitMess Codee in a ventilated room during the use and assembly. Pay special attention to this if you suffer from a physical condition that affects your ability to detect heat on your body.

Assembling or using CircuitMess Codee in an area with a potentially explosive atmosphere, such as areas where the air contains high levels of flammable chemicals, vapors, or particles (such as dust or metal powder), can be dangerous.

Exposure of CircuitMess Codee to environments with high concentrations of industrial chemicals, including liquefied gases that evaporate, such as helium, can damage the functionality of CircuitMess Codee.

Do not use CircuitMess Codee in hospital operating rooms or intensive care units.

Contact your doctor or our customer support (contact@circuitmess.com) to determine if the device's operation may compromise the work of medical devices.

To avoid possible interference with a pacemaker, maintain a minimum distance of 15 cm between the CircuitMess Codee and the pacemaker. To achieve this, do not carry the included device in your pockets.

Do not use CircuitMess Codee near hearing aids or similar medical aids and equipment to avoid interference with medical equipment.

Check aircraft safety regulations and turn off CircuitMess Codee on the aircraft if necessary.

Do not use CircuitMess Codee while driving.

To avoid lightning strikes, do not use CircuitMess Codee outdoors during storms.

Do not use the CircuitMess Codee in high-humidity environments such as bathrooms. Failure to do so may result in electric shock, injury, fire, and damage to the product, electronic components, power adapter, or other parts of this electronic educational kit.

Follow all the rules that limit the use of portable electronic devices in some situations and conditions.

The individual parts and components in the CircuitMess Codee can pose a choking risk to children under 36 months. Keep all components, tools, and parts of this product away from small children before and after assembling the device.

Additional Recommendations and Precautions for Parents, Guardians, and Teachers Buying CircuitMess Codee for Children

1. Carefully follow the instructions for adequately assembling

CircuitMess Codee. Keep these and all other instructions that came with the products in a safe place.

2. Supervise your child while assembling and using the CircuitMess Codee. Your responsibility is to ensure that the child uses the CircuitMess Codee correctly and that the CircuitMess Codee is suitable for the child's age and abilities.

3. Check from time to time if CircuitMess Codee is damaged or worn out in any way to prevent possible injuries and risks to the child's health and safety. If CircuitMess Codee is damaged, remove it immediately.

4. Remove any unnecessary packaging, but keep the instructions. Take care that children do not play with any plastic packaging as there are suffocation risks.

5. Teach children to always store CircuitMess Codee and other parts of the CircuitMess Codee educational kit appropriately to prevent accidents. Do not leave CircuitMess Codee on stairs or on the floor in your home or classroom where someone can step on them.

6. Always report a product security issue to our customer support (contact@circuitmess.com)

Declaration of Conformity

CircuitMess d.o.o. declares that this DIY educational kit CircuitMess Codee model complies with the essential requirements and all other relevant provisions of Directive 2014/53 / EU. The full text of the EU declaration of conformity is available at the following Internet address: circuitmess.com/certification.

Legal Information

These devices can be used in all EU Member States. Check all the national and local regulations about using the device. These devices may be restricted for use, depending on local laws.

Manufacturer:

CircuitMess d.o.o.

Ulica dr. Luje Naletilića 85,

10256 Botinec,

Zagreb,

Croatia

OIB: 50943449035

Proper disposal of this product

WEEE markings on the product indicate that this product may not be disposed of with the rest of your household waste in the EU. To prevent possible damage to the environment or human health from uncontrolled waste disposal, recycle the product responsibly. Recycling promotes the sustainable reuse of resources. For more information on the disposal of electrical and electronic equipment, don't hesitate to contact your local household waste disposal service, the store where you purchased the kit, or our customer support (contact@circuitmess.com).

IMPORTANT! Warranty conditions:

The warranty is valid only if the original invoice is attached to the product as proof of purchase during the complaint. If the customer sends the product for repair for any reason not covered by the warranty, the customer may be charged for inspection and testing and delivery costs.

WARRANTY STATEMENT

CircuitMess d.o.o., with its registered office in Zagreb, Croatia, Ulica dr. Luje Naletilića 85, guarantees the quality and proper functionality of the components that come in the CircuitMess Codee DIY educational kit for a duration of 24 months from the date of purchase.

If the assembled device does not work correctly due to defects in supplied parts or electronic components supplied in the CircuitMess Codee DIY educational kit, CircuitMess d.o.o. will repair the product or send an equivalent replacement product at their own expense.

In case you are experiencing assembly or functionality difficulties with your device, please contact us via email (contact@circuitmess.com).

Please include a detailed description of the problem.

If you are sending the product to a repair shop, it is recommended to deliver the product in the original packaging to protect it from potential damage during transportation.

WARRANTY CONDITIONS

The warranty period begins on the day of sale indicated on the invoice.

The warranty is valid upon presentation of the original invoice.

If the defect is not remedied within a reasonable period after receiving the product for repair, CircuitMess d.o.o. will replace it with a new product.

The repair shop does not take responsibility for storing and/or losing personal data while repairing the device.

WARRANTY DOES NOT COVER

Upgrades, alterations, modifications to hardware and/or software without the written consent of CircuitMess d.o.o.

Malfunctions due to improper handling, faults due to wear of the device and/or its parts (in you need help with assembly or if you have difficulty using the device after assembling it, please contact us at contact@circuitmess.com).

Defects caused by external particles (including, but not limited to: staples, waste, dust, food) and external factors (including, but not limited to: moisture, water, thermal damage).

Mechanical damage and/or failures caused by mechanical damage.

Use of the product for a purpose for which it is not intended.

Requirements for the appearance, technical functionalities, and/or capabilities of the product outside the manufacturer's specifications and/or standards.

Damages to personal data, other tangible and/or intangible assets of the buyer and/or third parties, indirect damages, lost profits caused by the use of the product, and/or its failure.

Repairs in an unauthorized repair shop and/or installation of non–original spare parts.

Damage caused during transportation caused by improper packaging.

The rights under this warranty are the exclusive and final rights of the customer unless otherwise provided by national law.

CircuitMess d.o.o. as the warranty provider and/or its authorized partners will not be liable for any defect, damage, loss, direct or indirect cost, or connection with the delivered products outside the warranty conditions written here.

This warranty does not affect other rights of the customer belonging to him on other legal grounds.

FCC STATEMENT:

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, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for Class B digital devices pursuant to Part 15 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference to radio communications. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication.

However, there is no guarantee that interference will not occur in a particular installation. If this toy does cause interference to radio or television reception, you can check this by turning the toy off and on while listening for the interference), one or more of the following measures may be useful. • Reorient or relocate the receiving antenna • Increase the separation between the toy and the radio or the TV • Consult the dealer or an experienced TV-radio technician for help.

NOTE: Changes, adjustments or modifications to this unit, including but not limited to the replacement of any transmitter component (crystal, semiconductor, etc), could result in a violation of FCC rules under pad 15 and/or 95 and must be expressly approved by CircuitMess d.o.o. or they could void the user's authority to operate the equipment.

Photosensitivity / epilepsy warning:

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy. If you, or anyone in your family, have an epileptic condition, consult your physician before playing. If you experience any of the following symptoms while using the product - dizziness, altered vision, eye or muscle twitches, loss of awareness, disorientation, any involuntary movement, or convulsions - immediately discontinue use and consult your physician before resuming play.

WARRANTY SHEET

Product name:	CircuitMess Codee do-it-yourself educational kit
Warranty on components and parts contained in this set is:	24 months
Date of purchase:	
Seller and point of sale stamp:	
Invoice number:	

Information on interventions during warranty period is entered by a repair shop technician at an authorized repair shop.

Received on	Issued on	Fault description	Warranty extension

Manufacturer:

CircuitMess d.o.o.
Ulica dr. Luje Naletilića 85
10256 Botinec,
Zagreb,
Croatia
Country of origin: Croatia
www.circuitmess.com

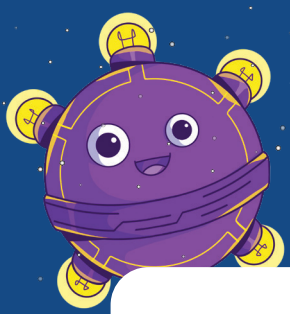
Authorized repair shop:

CircuitMess d.o.o.
Ulica dr. Luje Naletilića 85
10256 Botinec,
Zagreb,
Croatia
Country of origin: Croatia
www.circuitmess.com

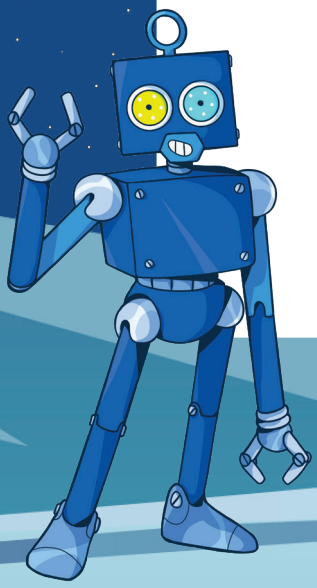
CircuitMess

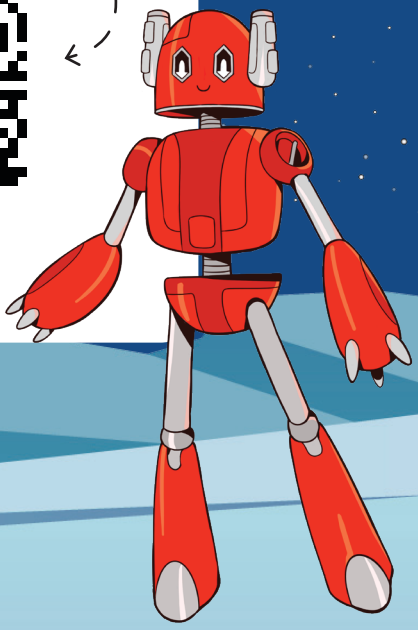
WARNING:
Not for children under 3 years.

WACKY ROBOTS



Scan for more fun:





CircuitMess