



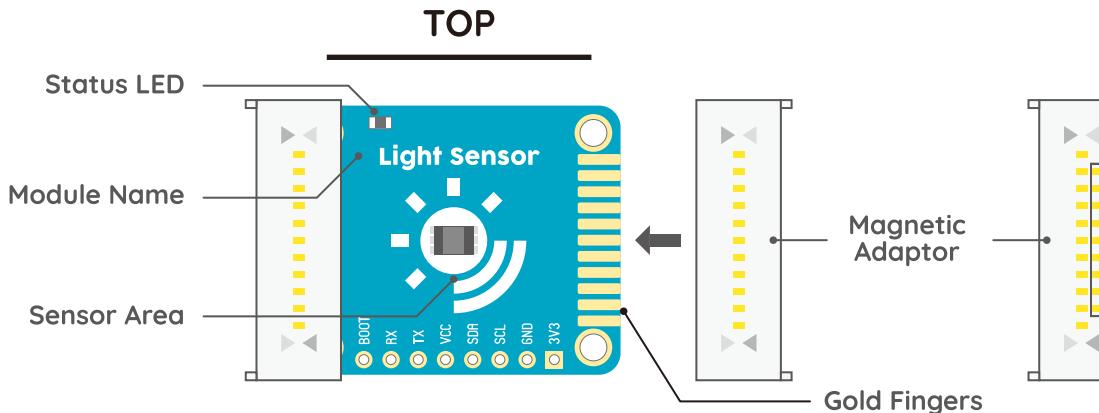
Your  
Invention Journey  
Starts Here

Grove Zero

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**Status LED**

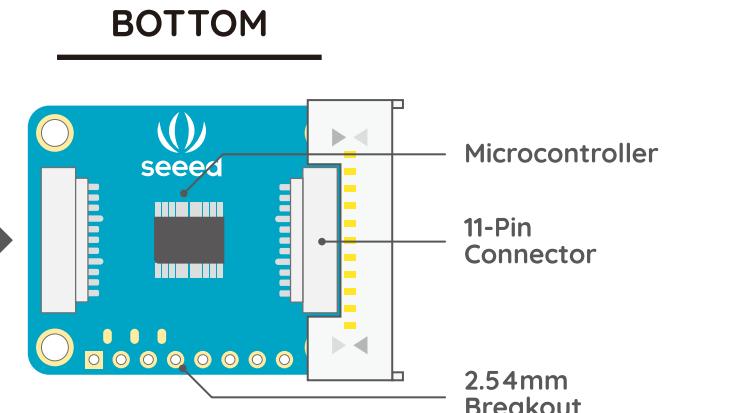
The status LED flashes if your Input module is idle and not paired to an output.

**Module Name**

There are many different types of Grove Zero modules, but they are all labeled so you don't get confused.

**Sensor Area**

The main component of a Grove Zero module will always be placed in the center so you can learn about its electronics easier.

**Magnetic Adaptor**

A detachable magnetic adaptor that allows you to snap the modules together with the magnets. It works in different ways, regardless of the order.

**Gold Fingers**

This is where you can connect the 3-way magnetic adaptors.

**11-Pin Connector**

Grove Zero modules always have at least two 11 pin connectors so that you can chain them together using wires.

**Versatile Magnetic Adaptor**

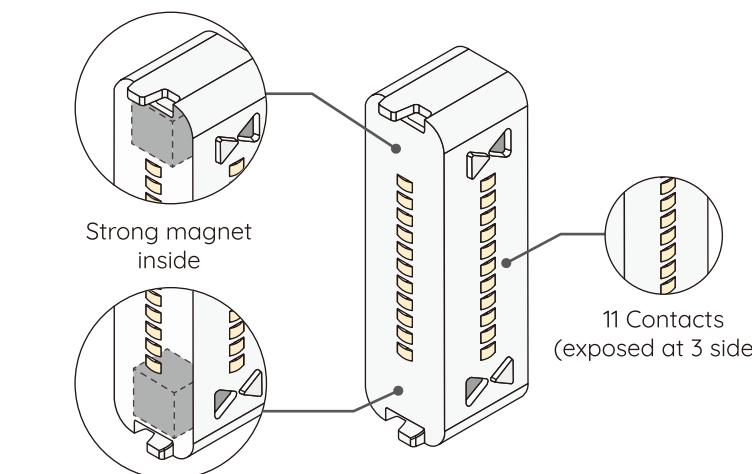
Inside each Magnetic Adaptor, there are a pair of strong magnets and 11 specially designed conductors that make it a super flexible connector which can be connected in many different ways, without concern for order, direction, or having the modules all facing up.



Side-to-side Connection

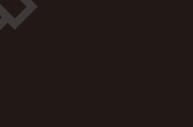


Stack

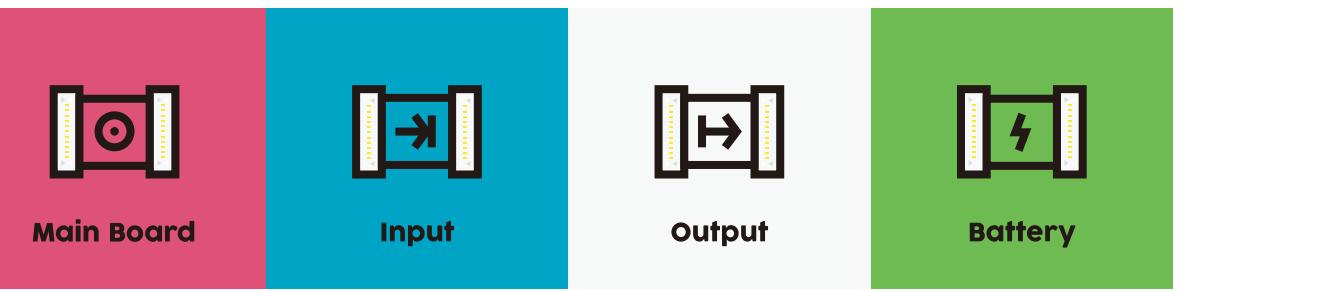
**Short circuit hazards****Remove the Magnetic Adaptor**

**Be extremely careful** while detaching the magnetic adaptors from the Grove Zero modules, especially the first time. **Ask for help or use tools if needed.** **DO NOT** take the adaptors apart with force! You might hurt yourself or damage the board. Without the adaptor, you can use cables for connection, in case you need extra length for the circuit.

The exposed 11 conductors of the adaptor might be subjected to an electrical short circuit. **Shorting the circuit will NOT hurt you** (as it's low voltage) but it will cause Grove Zero modules to malfunction. To avoid this, keep it clean and away from any conductive materials such as water, dirt, small pieces of metal, etc.



## Grove Zero modules are color-coded by function



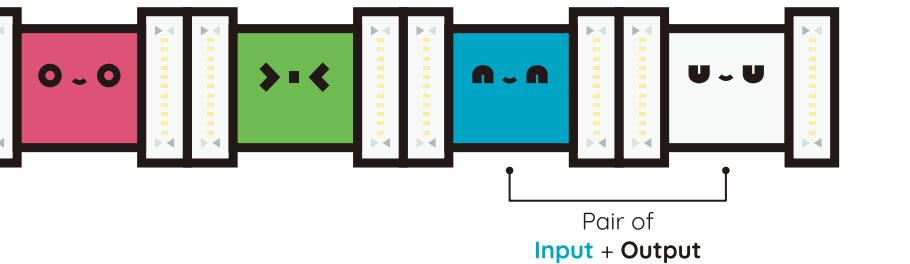
The **Pink Module** is the Main Board which is like the brain to others. It receives signals from the Blue Modules, and gives instructions to the White Modules.

The **Blue Modules** are the Input Modules. They tell the Pink Module (the brain) what is happening in the real world.

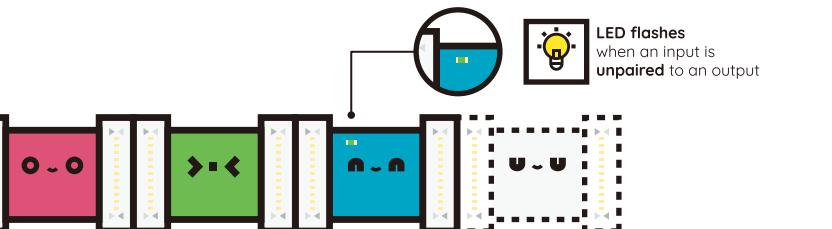
The **Green Module** is the electrical power source for the other modules.

The **White Modules** are the Output Modules, they just do things like make sound, light up, move, etc.

Plug and play by pairing up **Input + Output** combinations



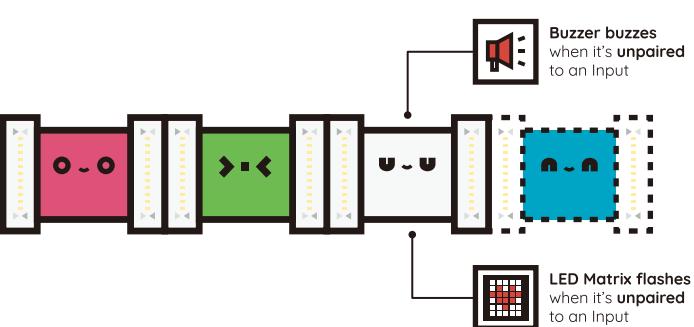
Unpaired **Input** in the circuit



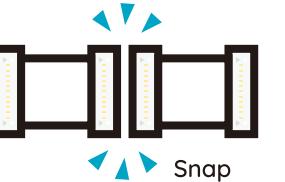
All the Grove Zero modules are programmed to be plug-and-play if you pair up **Input** and **Output** in the circuit. It helps you learn about the electronics very easily, as well as being able to make simple creative project out of it.

Do not worry about order or direction, just power up the circuit and they will run immediately.

Unpaired **Output** in the circuit



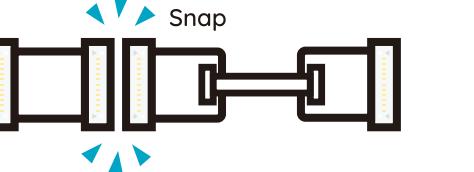
1



## 2. Connect with Cables

A cable is useful when you need extra extensions. You can use the Grove Zero cables to chain the modules together in any order or orientation.

3



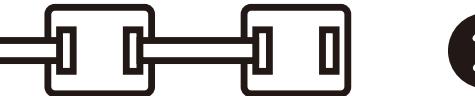
## 4. Connect with Breakout Holes

The breakout holes can come in handy sometimes. Once you learned how to solder, you can use the breakout holes for jumper wires, conductive wires and pin headers to make a firm connection.

Note: Soldering things on your module may have interference for the magnetic connections between the modules. And DO NOT use this way if you don't know how to solder.

## 1. Connect with Magnets

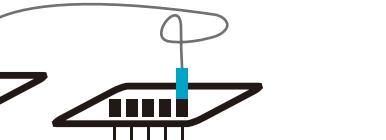
The easiest way to connect your Grove Zero modules is by snapping them together with MAGNETS! Try it in stacks, arrays, or both. Do not worry about the module order, they'll work as long as they can be snapped together.



2

## 3. Connect with Magnets & Cables

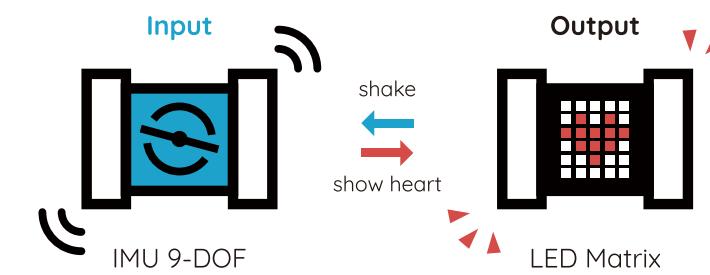
As the 3-way adaptor is detachable, you can take one off and use a cable instead. In this way, you can have the other side for quick magnetic connection, while being able to extend your circuit to fit your project.



4

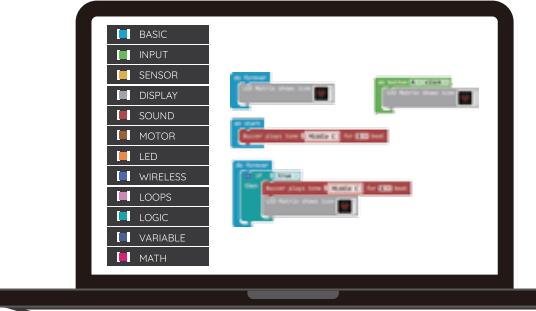
## Module Matcher

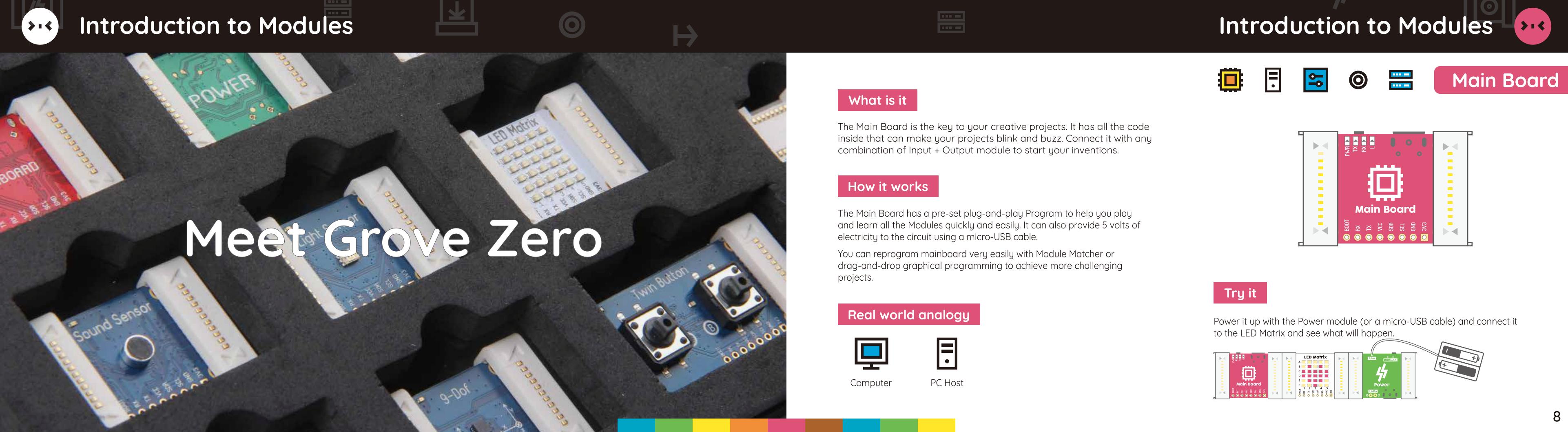
Module Matcher is a computer-based app that allows you to quickly set up fun projects by pairing up the actions of input modules and the reactions of output modules. Learn about this on the [Page 45 - 46](#).



## Microsoft MakeCode for Grove Zero

You can reprogram your Grove Zero Main Board using drag-and-drop blocks in Microsoft MakeCode for Grove Zero. This allows you to accomplish more cool projects. Learn about this on the [Page 47 - 52](#).





# Introduction to Modules



# Introduction to Modules



## Meet Grove Zero

### What is it

The Main Board is the key to your creative projects. It has all the code inside that can make your projects blink and buzz. Connect it with any combination of Input + Output module to start your inventions.

### How it works

The Main Board has a pre-set plug-and-play Program to help you play and learn all the Modules quickly and easily. It can also provide 5 volts of electricity to the circuit using a micro-USB cable.

You can reprogram mainboard very easily with Module Matcher or drag-and-drop graphical programming to achieve more challenging projects.

### Real world analogy



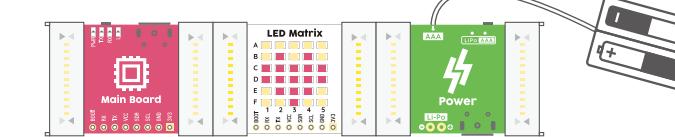
Computer



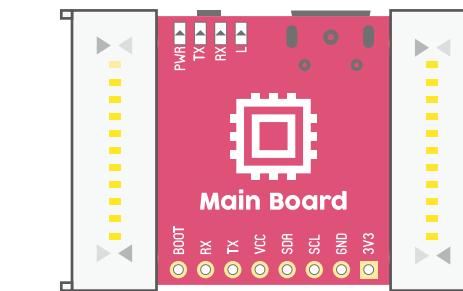
PC Host

### Try it

Power it up with the Power module (or a micro-USB cable) and connect it to the LED Matrix and see what will happen.



### Main Board





## LED Matrix



### What is it

The LED Matrix is composed of 5x6 blue LEDs. It can display numbers, letters, graph bars, and pixel images.

### How it works

The LED Matrix is like a very small section of screen. It displays information like words, numbers, and pictures through a combination of ON and OFF LEDs. LEDs in the matrix have coordinates, for example, the LED in row E and column 4. You can plot a smiley face by turning on the LEDs at specified coordinates while keep the others OFF.

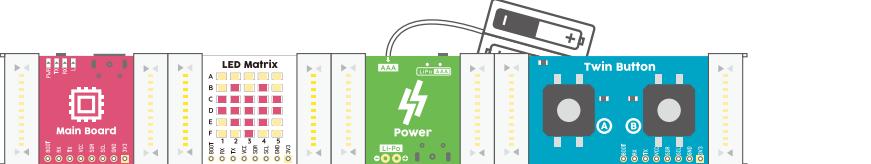
### Real world analogy



LED Screen

### Try it

Power it up with the Power module, connect it to the Main Board and a Twin Button, then click the buttons and see what will happen.



### What is it

The Buzzer is usually used to make an annoying sound to catch people's attention, but you can also use it to make ring tones or play music.

### How it works

Inside the Buzzer is a device that vibrates very quickly when electricity passes through it. The vibration generates a buzzing sound that moves though the air and into our ears. Change the frequency of electricity to change the frequency of vibration for generating different tones.

### Real world analogy



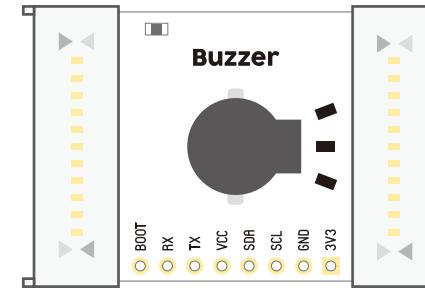
Door Bell



Alarm

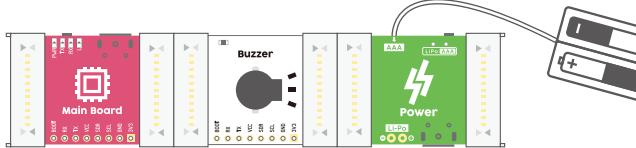


## Buzzer

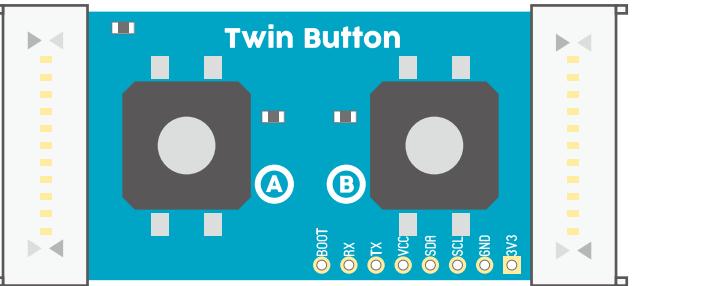


### Try it

Power it up with the power module (or a micro-USB cable) and connect it to Main Board and see what will happen.



## Twin Button



### What is it

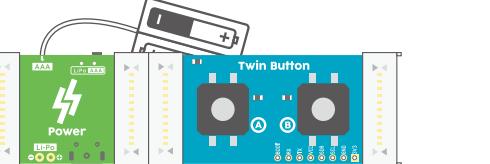
The Twin Button has two push-buttons on board - button A and button B. They can detect events such as a single press, a double press, and a long-pressing.

### How it works

Push buttons are a form of simple input. When you press a button you actually close a circuit and let signals pass through. Single pressing a button is closing the circuit for a very short period of time and then open it, and double-pressing means rapidly repeating this process twice. Long-press or holding the button is closing the circuit for a bit longer before opening it.

### Try it

Power it up with the Power module, then press the buttons and see what will happen.



### Real world analogy



Keyboard



Controller

### What is it

The IMU 9-DOF contains powerful motion sensors that can track motions like tilt, free fall and shake, detect objective orientation, and work as a compass to detect earth's magnetic field.

### How it works

The IMU 9-DOF module combines a 3-axis accelerometer, a 3-axis gyroscope, and a 3-axis magnetometer, all packaged in a single microchip. They are complex micro-electromechanical systems (MEMS) that can detect the sensor speed, orientation and rotations, output information such as acceleration in milli-g(mg), compass heading (°), and rotation(°). The IMU 9-DOF is pre-programmed to detect a number of standard action like shake and tilt.

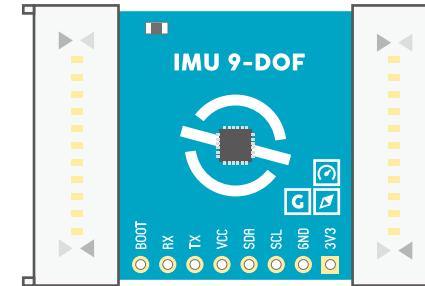
### Real world analogy



Gyroscope

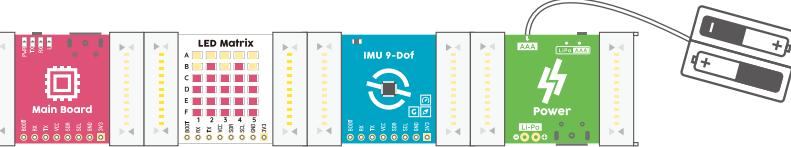


## IMU 9-DOF

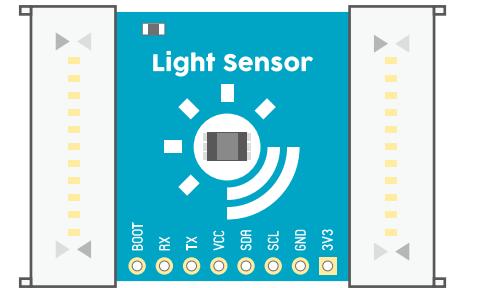


### Try it

Power it up with the Power module, connect it to Main Board and LED Matrix, then tilt it to see what will happen.



## Light Sensor



### What is it

The Light Sensor measures the intensity of visible light and tells you how dark or light the environment is.

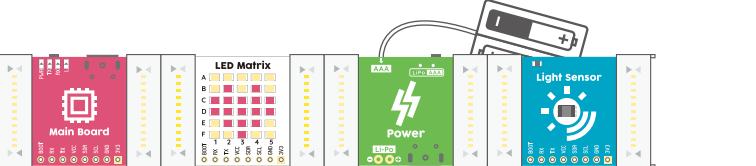
### How it works

The Light Sensor transforms the ambient light level to voltage level that can be converted into digital signals and read by the microcontroller for calculating the illuminance in lux. When the light intensity is lower than a certain level, which is called 'the LOW Threshold', the sensor detects a 'dark environment'. When the light intensity is above a 'HIGH Threshold', it detects a 'light environment'.

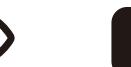
Try to use the LOW/HIGH Threshold to trigger events like turn on the buzzer when there is no light.

### Try it

Power it up with the Power module, connect it to Main Board and a LED Matrix, then cover the light sensor with your hand and see what will happen.



### Real world analogy



Human Eye



Camera

### What is it

The Temperature Sensor measures the ambient temperature.

### How it works

The Temperature Sensor transforms the temperature in the ambient environment into digital signals that can be read by the microcontroller for calculating the temperature. When the temperature is lower than a certain level, which is called 'the LOW Threshold', the sensor detects a 'Cold environment'. When the temperature is above a 'HIGH Threshold', it detects a 'Hot environment'.

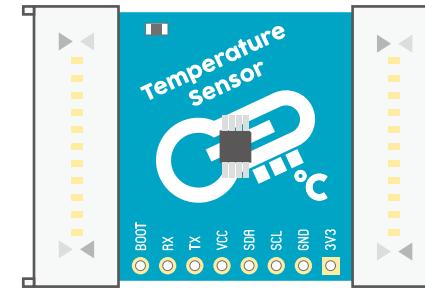
Try to use the LOW/HIGH Threshold to trigger events like displaying the temperature on the LED Matrix when the temperature is higher than 30 degrees.

### Real world analogy



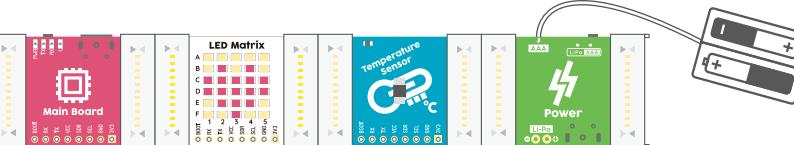
Thermometer

## Temperature Sensor



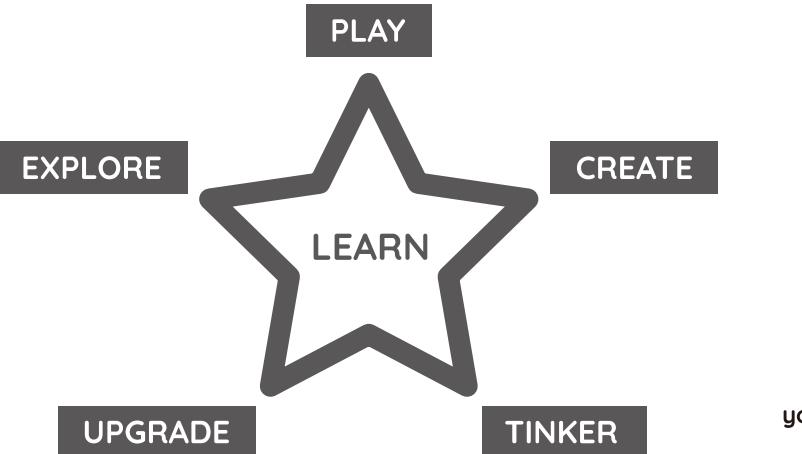
### Try it

Power it up with the Power module, connect it to the Main Board and LED Matrix, observe what will display on the LED Matrix.





# The Invention Star



## What is the Grove Zero Invention Star?



The **Grove Zero Invention Star** lists the five stages you might go through on your invention journey. At each stage, there are many playful activities and questions that can help you learn different skills, foster creativity, and develop your logical thinking.

## Play with it

Still not figuring out the module functions? Don't worry. Just play with it. Start with a simple input and an output, like the Twin Button and Buzzer. Then experiment with other combinations. You might just create your first project prototype out of it.

## Create something

Big inventions start from a small project. Make a simple project that contains only one input and one output. Use your imagination and take advantage of the Grove Zero's design. Connect them in different ways for different projects.

## Tinker your creations

Use **Module Matcher** to tinker with your inventions, understand what are the actions of an input module and what are the reactions of an output module. Learn to use the events that happens on an input to affect the behavior of an output, this will help develop your logical thinking before learning to code.

## Upgrade your creations

The **Microsoft MakeCode block-based programming** will allow you to upgrade your projects very easily. Add more modules to your circuit and program your Main Board to improve your creations, or even turn them into new projects. Make it more fun and more functional, solve real world problems with them.

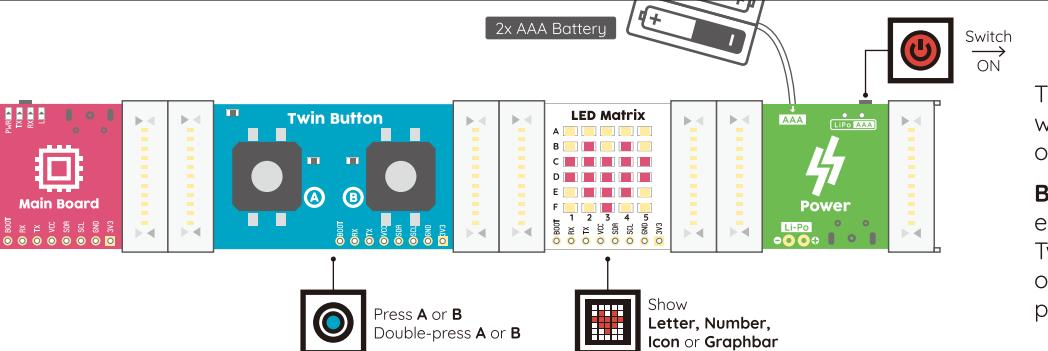
## Explore your ideas

Keep exploring your ideas and develop your own inventions. Remix the modules and the ways of connecting them. Use Module Matcher or graphical programming to realize your ideas. Don't worry if it doesn't work at the beginning. Keep experimenting. Discuss with your friends, your teacher, or your parents. Learn from the mistakes. Find the problem and solve it.

# Play



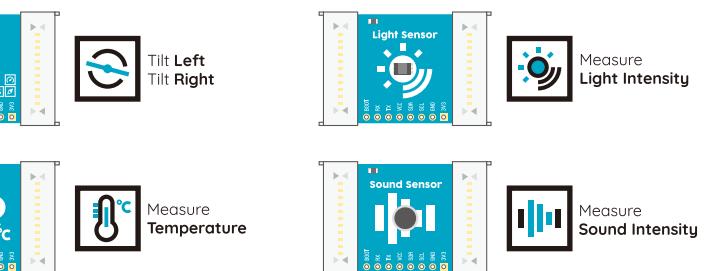
## Start by playing with this circuit



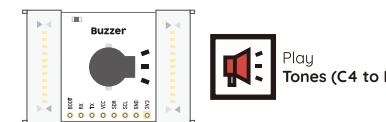
The best way to start with Grove Zero is by playing with it. All the modules are programmed to be used out-of-the-box.

**Build your first circuit as instructed left.** Then explore what other modules can do by swapping the Twin Button and LED Matrix with different inputs and outputs. Do not worry about order or direction, just power them up and they will run immediately.

## Explore other Output modules



## Explore other Input modules



# Create - Sound Visualizer

## Create a Sound Visualizer

Watch those beats! Invent a device that can visualize the nearby sound intensity. Try to snap your fingers around it with your friends, see who can create the loudest clicking sound. Or put it next to your music player and see the music beats.

Project #01

TIME: 5 minutes

LEVEL: ★★★★☆

### Modules and materials

- Main Board
- Sound Sensor
- LED Matrix
- Power
- Battery Holder
- 2x AAA Battery (Not Included)

Build the circuit and **Yell at it** 😱

### How it works

**Main Board:** Receives sensor data from the input (range from 0 to 1023), then maps it to LED Matrix (range from 0 to 18) as a LED Bargraph.

**Sound Sensor:** Measures the nearby sound intensity and converts it into digital signals that range from 0 to 1023, then sends the signal to main board.

**LED Matrix:** Displays and updates the received LED Bar Level which represents the current sound intensity ,20 times per second.

**Power:** Provides electricity to the circuit.



# Create a Thermeowmeter



# Create a Thermeowmeter



Create a

## Thermeowmeter

Well, it's actually a **Thermeowmeter**. A cute cat that tells you the temperature in the ambient environment. Put it in your room or near the window to know the outdoor temperature in advance and dress yourself properly before going out.

Project #02



TIME



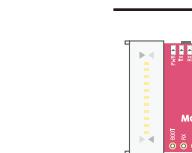
15 minutes

LEVEL

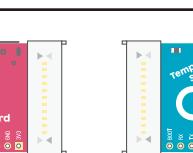


★★★★★

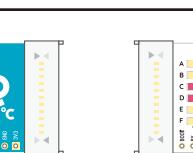
Modules and materials



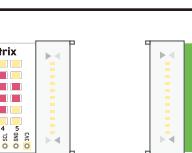
Main Board



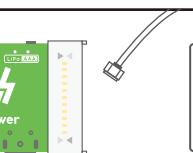
Temperature Sensor



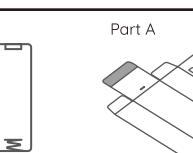
LED Matrix



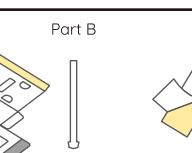
Power



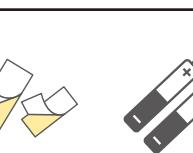
Battery Holder



Template 1  
(Part A&B)

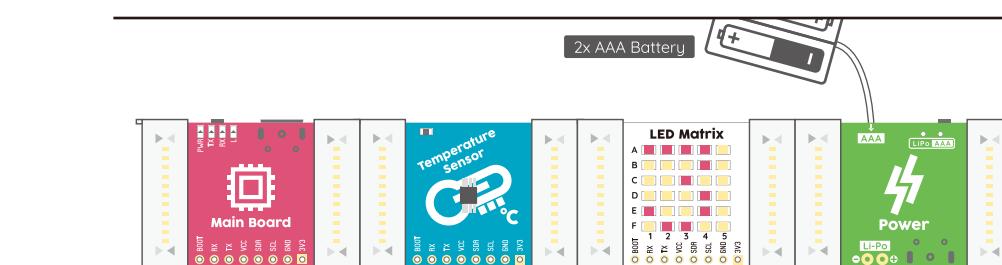


Double-sided  
Adhesive Tape



2x AAA Battery  
(Not Included)

### 1. Build the circuit



### How it works

**Main Board:** Receives sensor data from the input (range from -25 C to 50 C), then sends it to the LED Matrix.

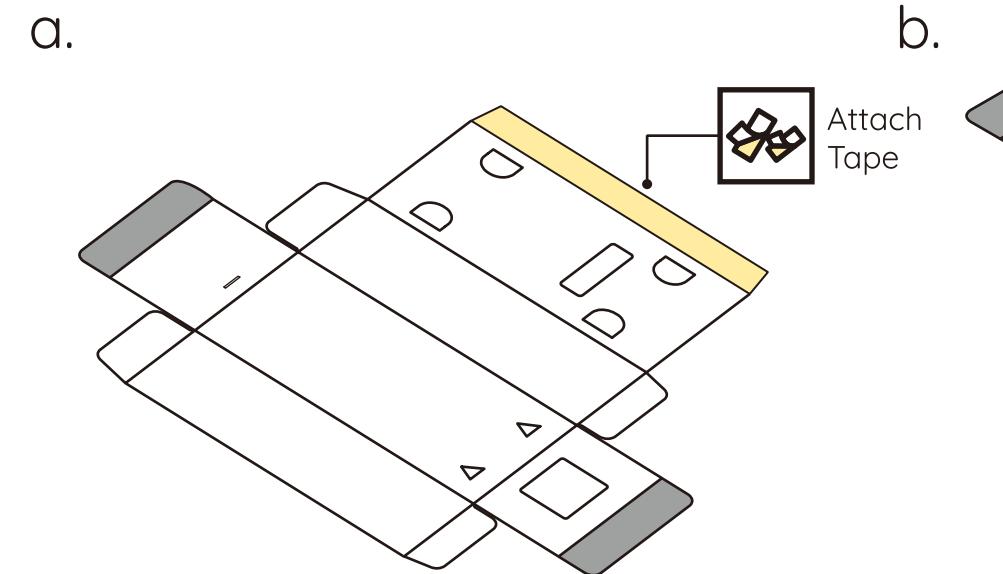
**Sound Sensor:** Measures the nearby temperature and converts it into digital signal, then sends the signal to the Main Board.

**LED Matrix:** Displays and updates the received temperature every three seconds.

**Power:** Provides electricity to the circuit.

# Create a Thermeowmeter

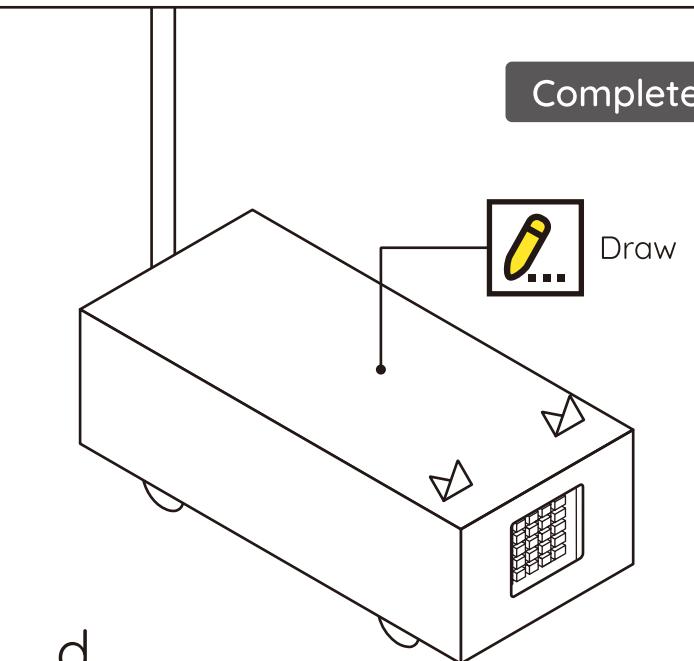
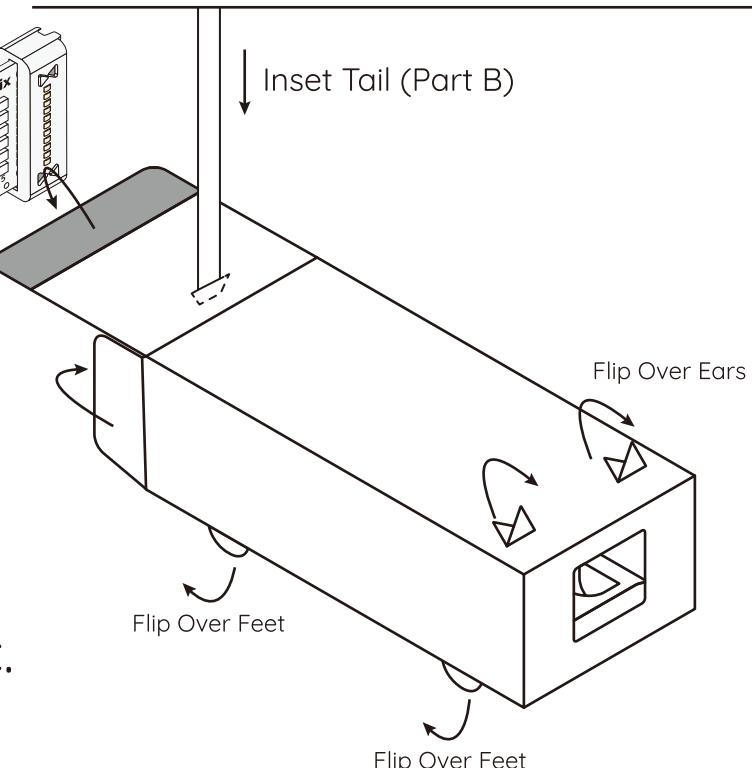
2. Assemble the template 1

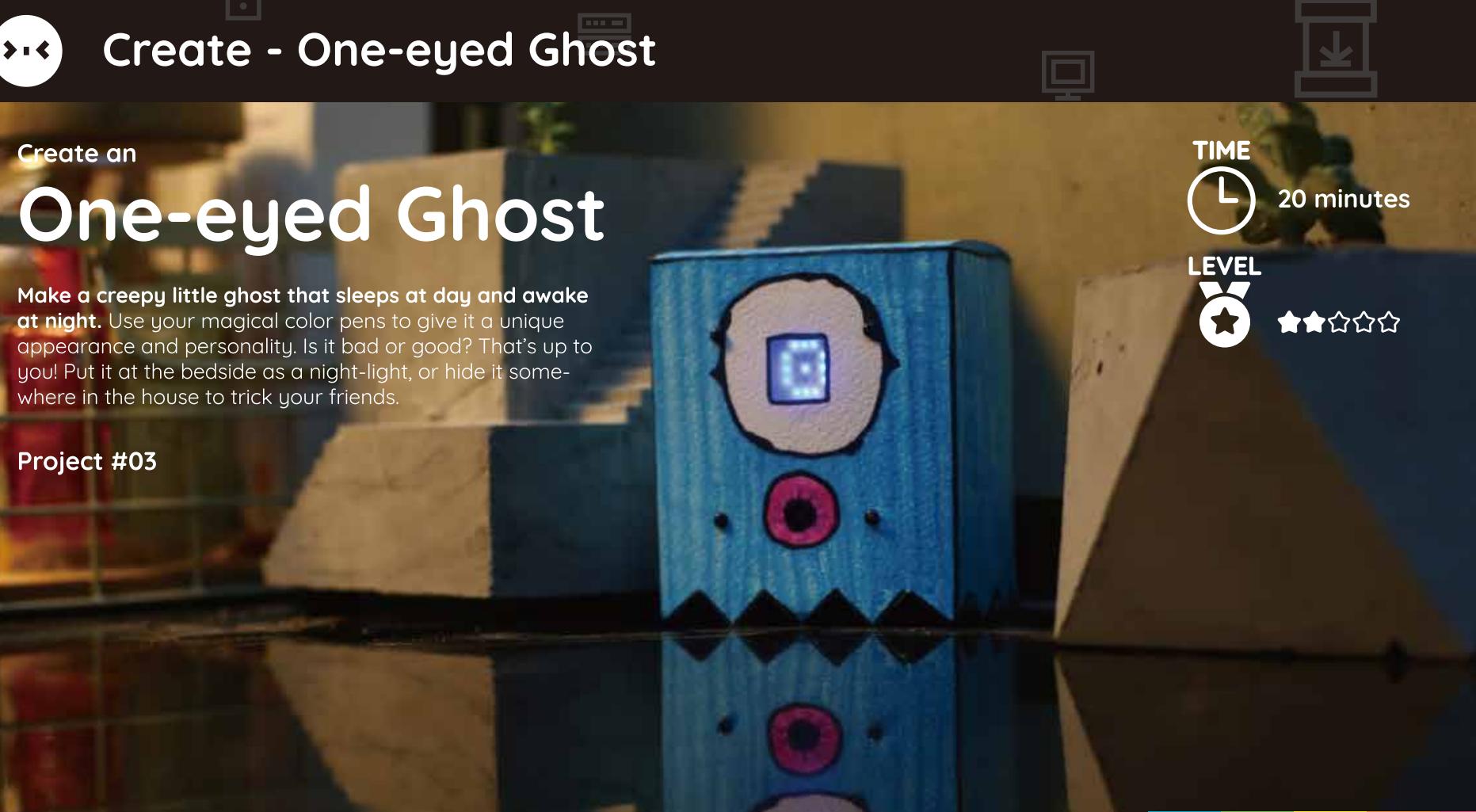


Back of Adhesive Area  
Adhesive Area Insert Part



3. Place the circuit into template 1 and complete





## Create - One-eyed Ghost

# Create an **One-eyed Ghost**

**Make a creepy little ghost that sleeps at day and awake at night.** Use your magical color pens to give it a unique appearance and personality. Is it bad or good? That's up to you! Put it at the bedside as a night-light, or hide it somewhere in the house to trick your friends.

**Project #03**

TIME



20 minutes

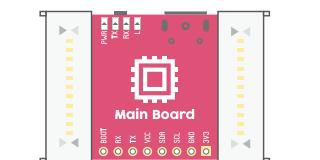
LEVEL



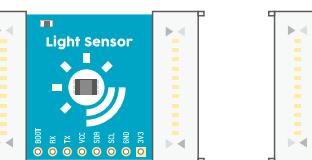
★★★★★

## Create - One-eyed Ghost

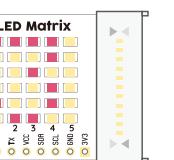
### 1. Prepare modules and materials



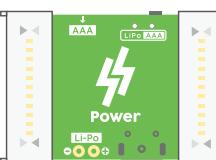
Main Board



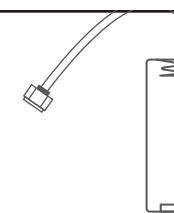
Light Sensor



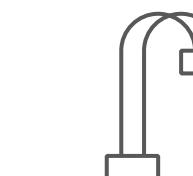
LED Matrix



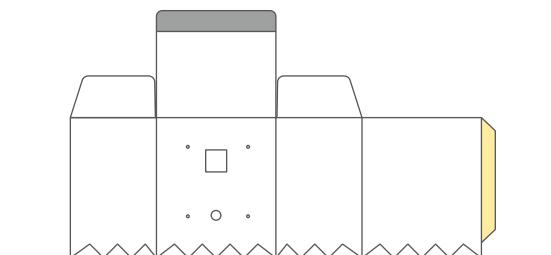
Power



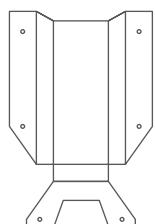
Battery Holder



Wire



Template 2  
(Part A)



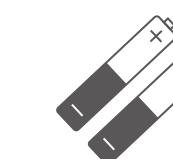
Template 2  
(Part B)



Double-sided  
Adhesive Tape

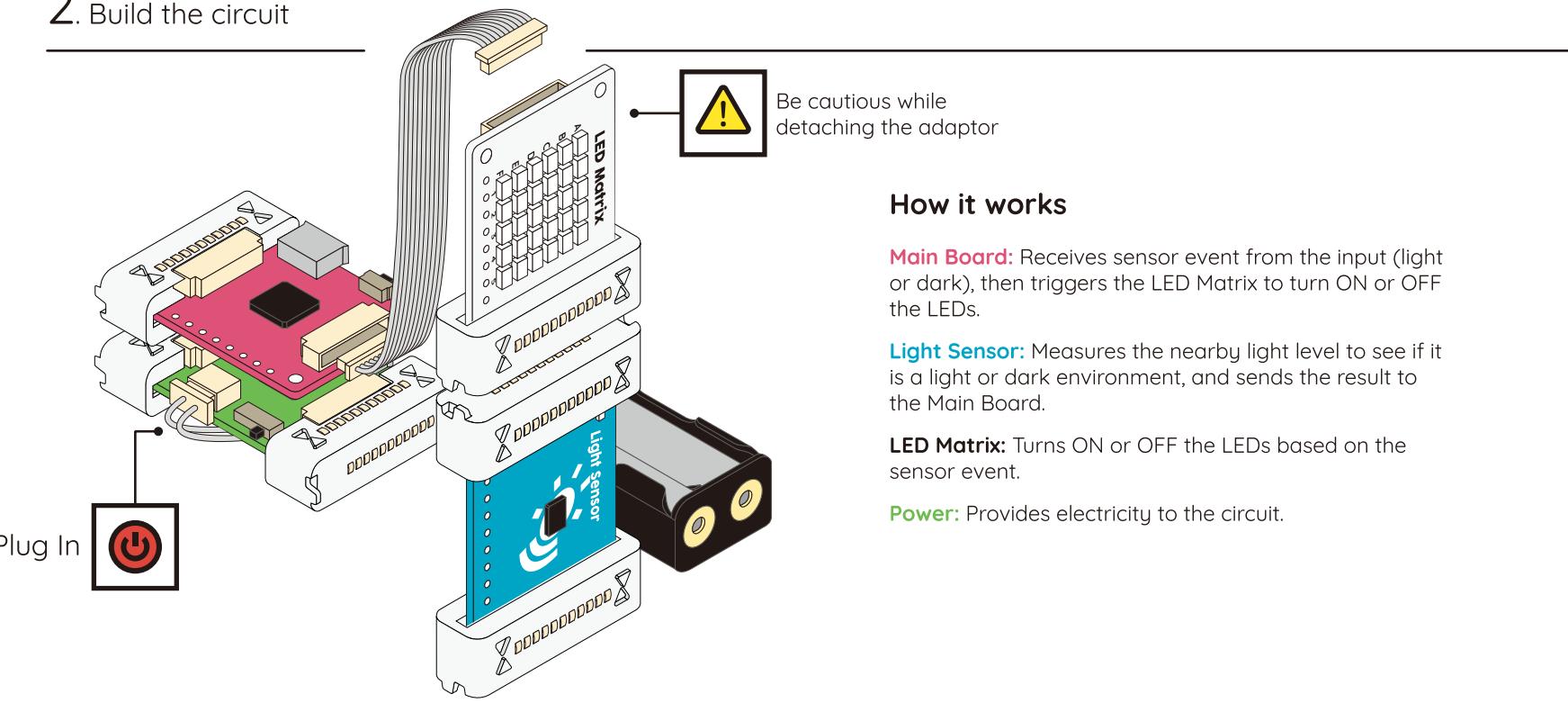


4x Plastic Rivet

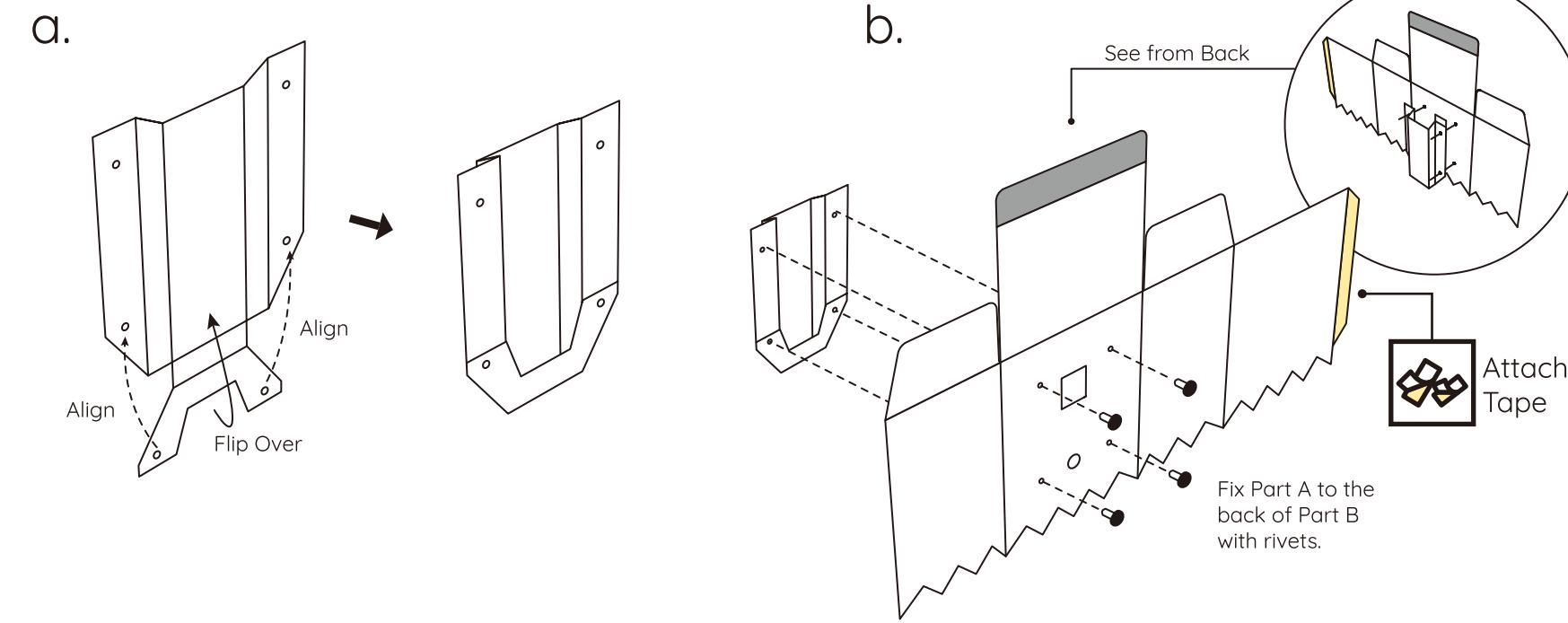


2x AAA Battery  
(Not Included)

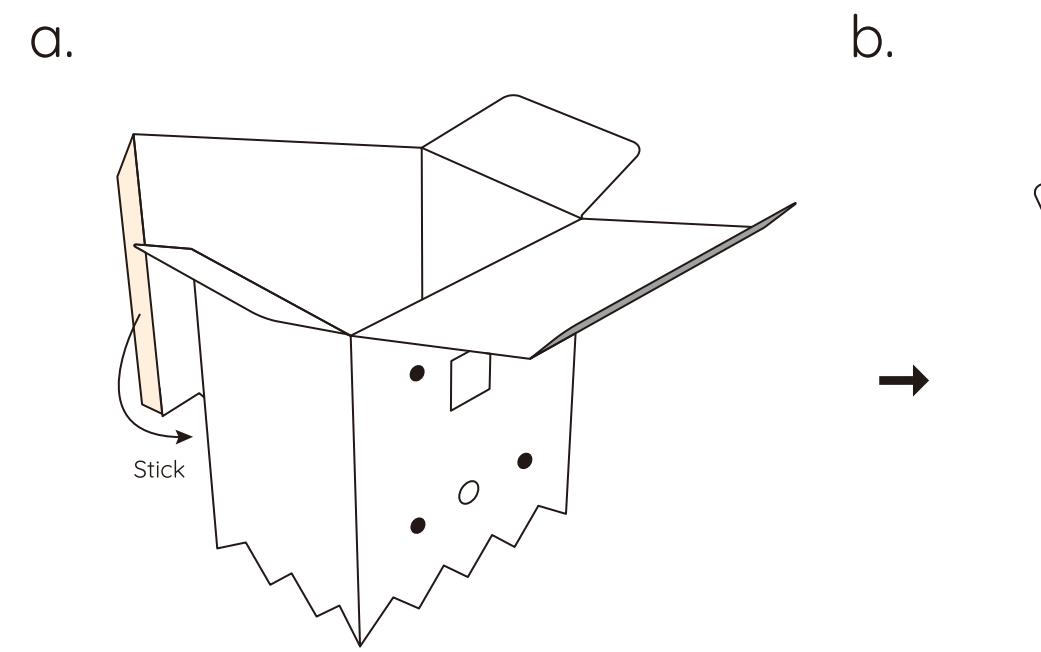
## 2. Build the circuit



## 3. Assemble the template 2 (Part B) to template 3 (Part A)

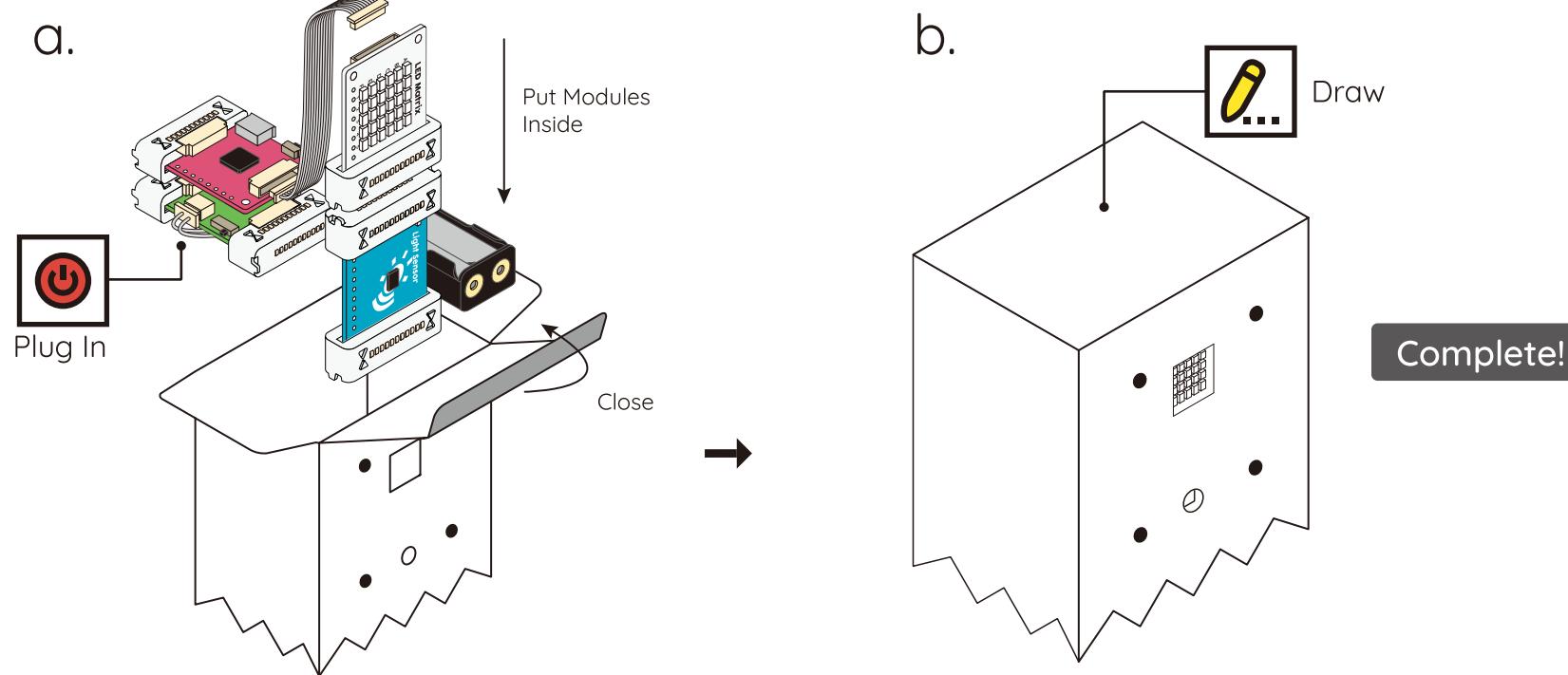


4. Assemble the template 2



Back of Adhesive Area      Insert Part

5. Place modules into the template 2



Create an

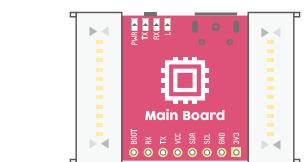
# Angular Guitar

Invent a distinctive instrument that rings different tones at different tilt angles – the **Angular Guitar**! Then unleash your creativity and passion, play it like a rock star!

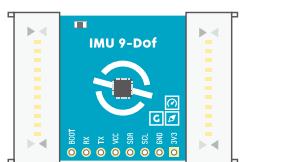
Project #04



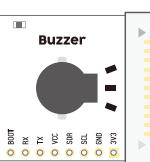
1. Prepare modules and materials



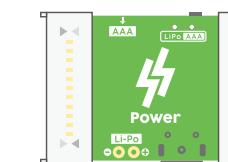
Main Board



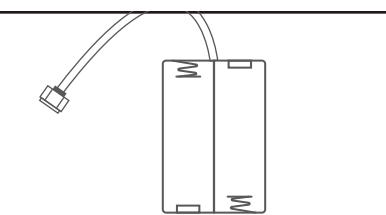
IMU 9-DOF



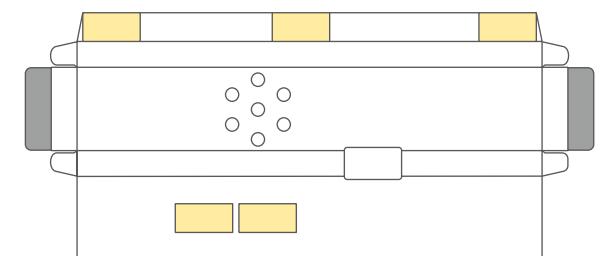
Buzzer



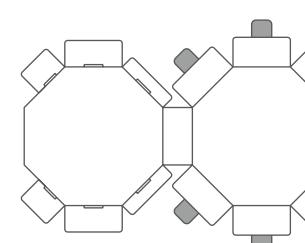
Power



Battery Holder



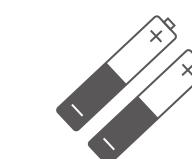
Template 3  
(Part A)



Template 3  
(Part B)

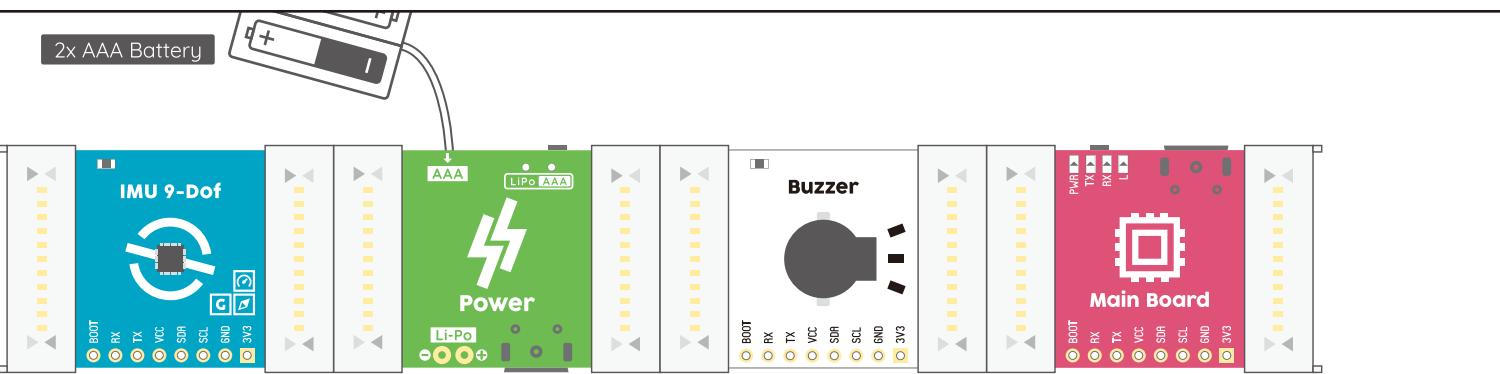


Double-sided  
Adhesive Tape



2x AAA Battery  
(Not Included)

## 2. Build the circuit



### How it works

**Main Board:** Receives sensor data from the input (from 0 to 1023), then maps it into tones (from C4 to B6).

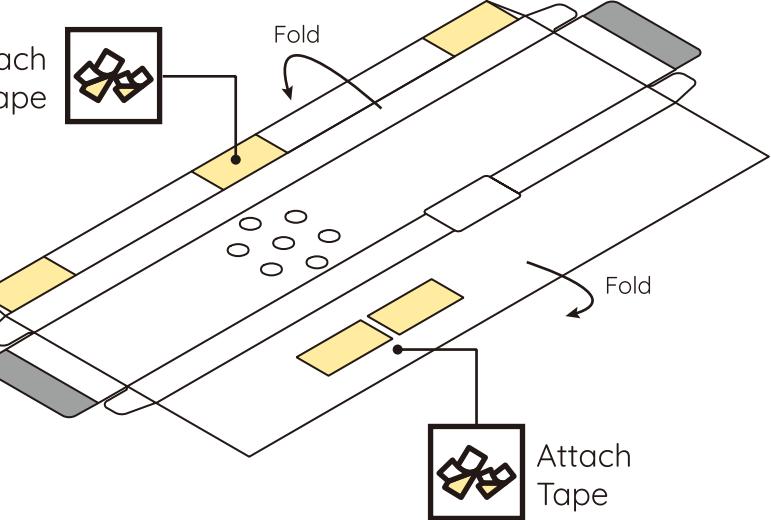
**IMU 9-DOF:** Measures the acceleration at X axis and sends the sensor data to the Main Board. The acceleration will change when you tilt the sensor module.

**Buzzer:** Plays tones (from C4 to B6) based on the measured acceleration at X axis.

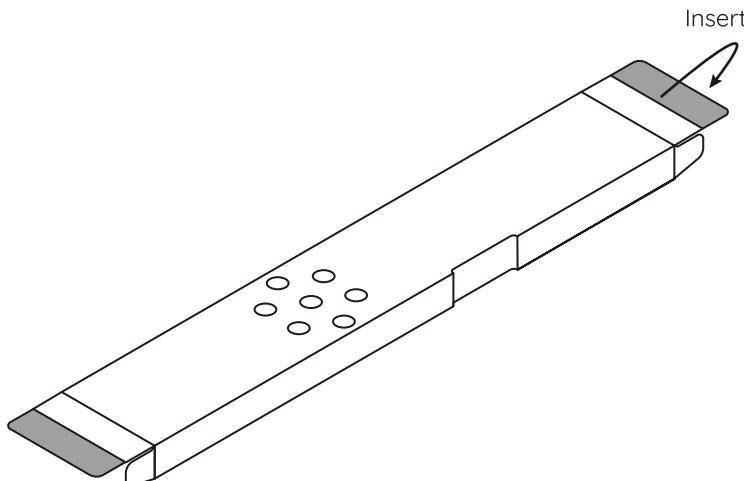
**Power:** Provides electricity to the circuit.

## 3. Assemble the template 3 (Part A)

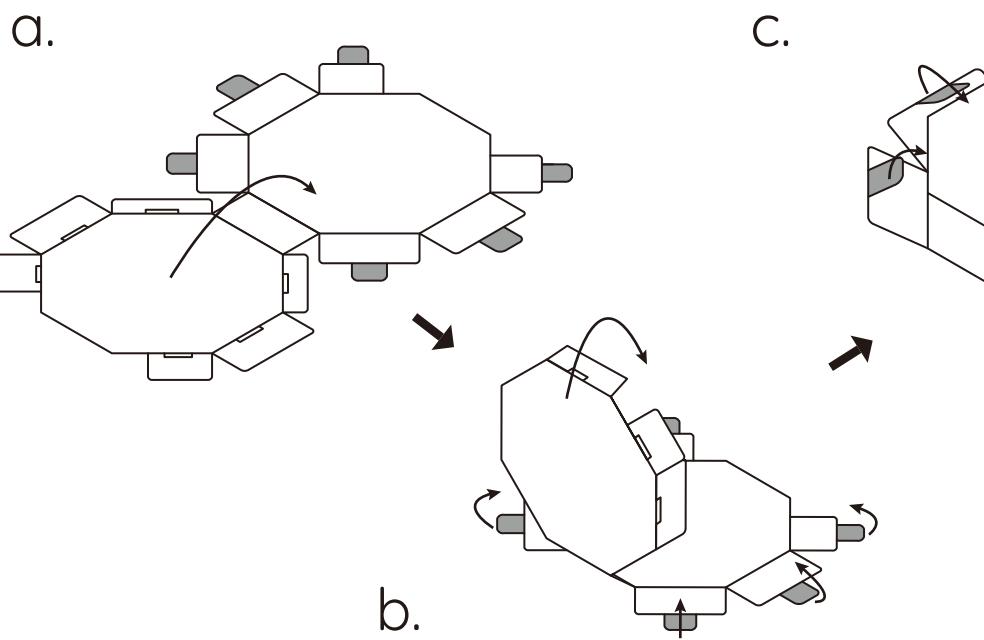
a.



b.

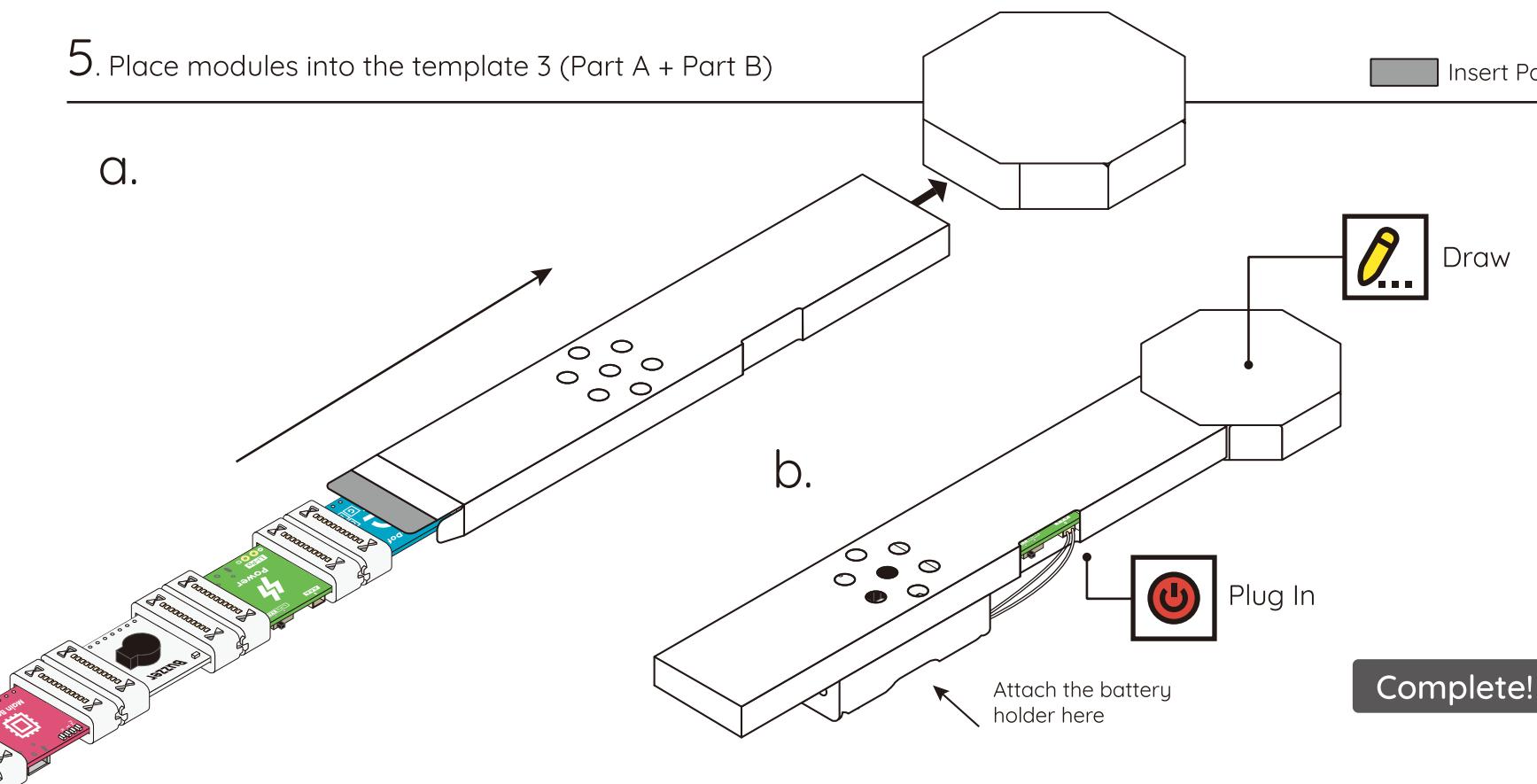


4. Assemble the template 3 (Part B)



Insert Part

5. Place modules into the template 3 (Part A + Part B)



Insert Part



## Create - Worm Bot

Create a

# Worm Bot

Invent a cute companion - **the Worm Bot**, that can change its face when you press the button. Place it at the doorway and give it a smiley face to welcome the guests. Or leave it on the table with a mad look when your parents come home late.

Project #05



TIME



30 minutes

LEVEL

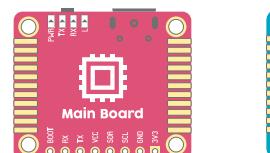


★★★★★

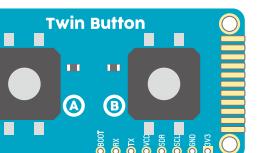


## Create - Worm Bot

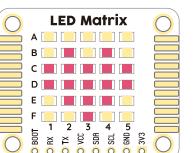
### 1. Prepare modules and materials



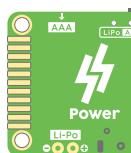
Main Board



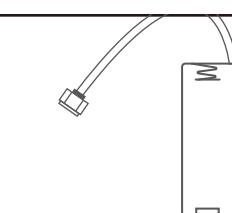
Twin Button



LED Matrix



Power



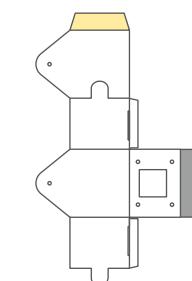
Battery Holder



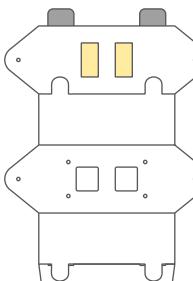
Be cautious while  
detaching the adaptors



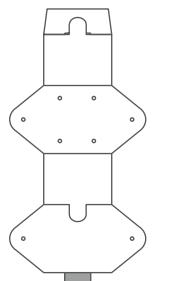
Double-sided  
Adhesive Tape



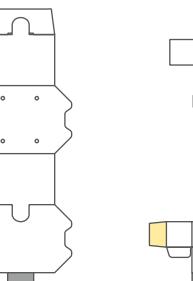
Template 4  
(Part A)



Template 4  
(Part B)



Template 4  
(Part C)



Template 4  
(Part D)



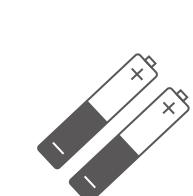
Template 4  
(Part E)



22x Plastic Rivet



3x Wire

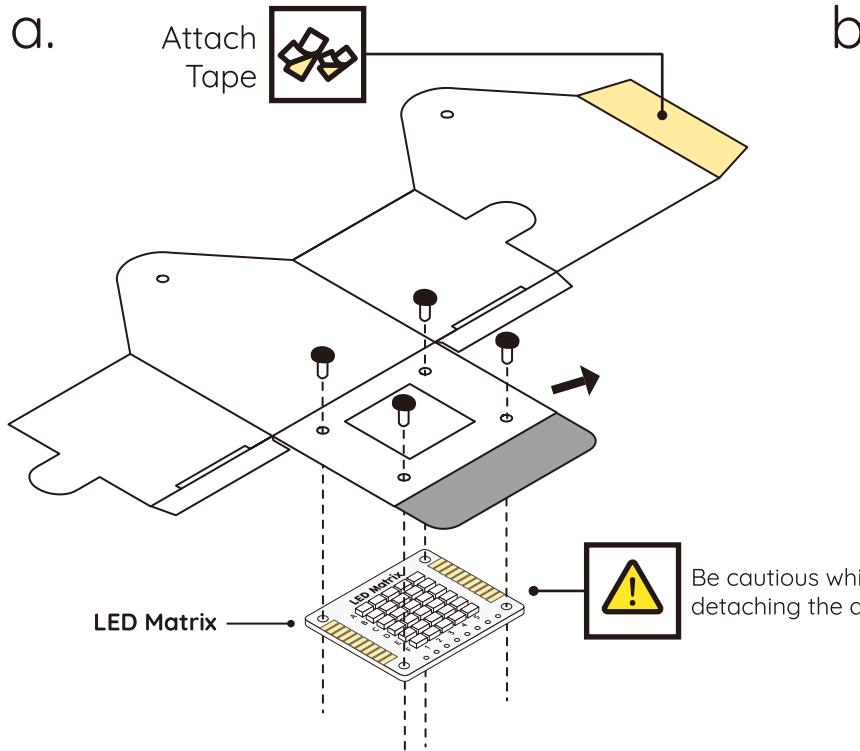


2x AAA Battery  
(Not Included)



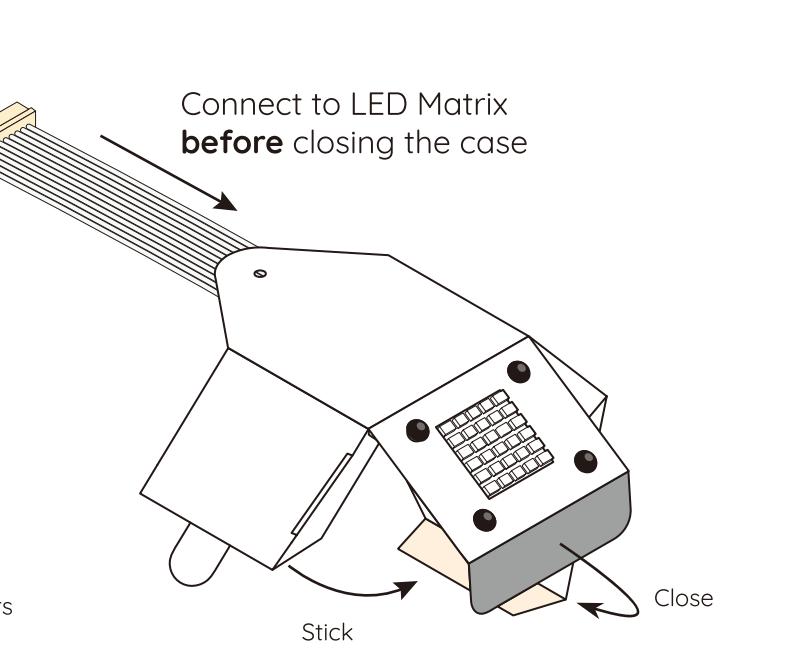
# Create - Worm Bot

## 2. Assemble the worm head - Template 4 (Part A)

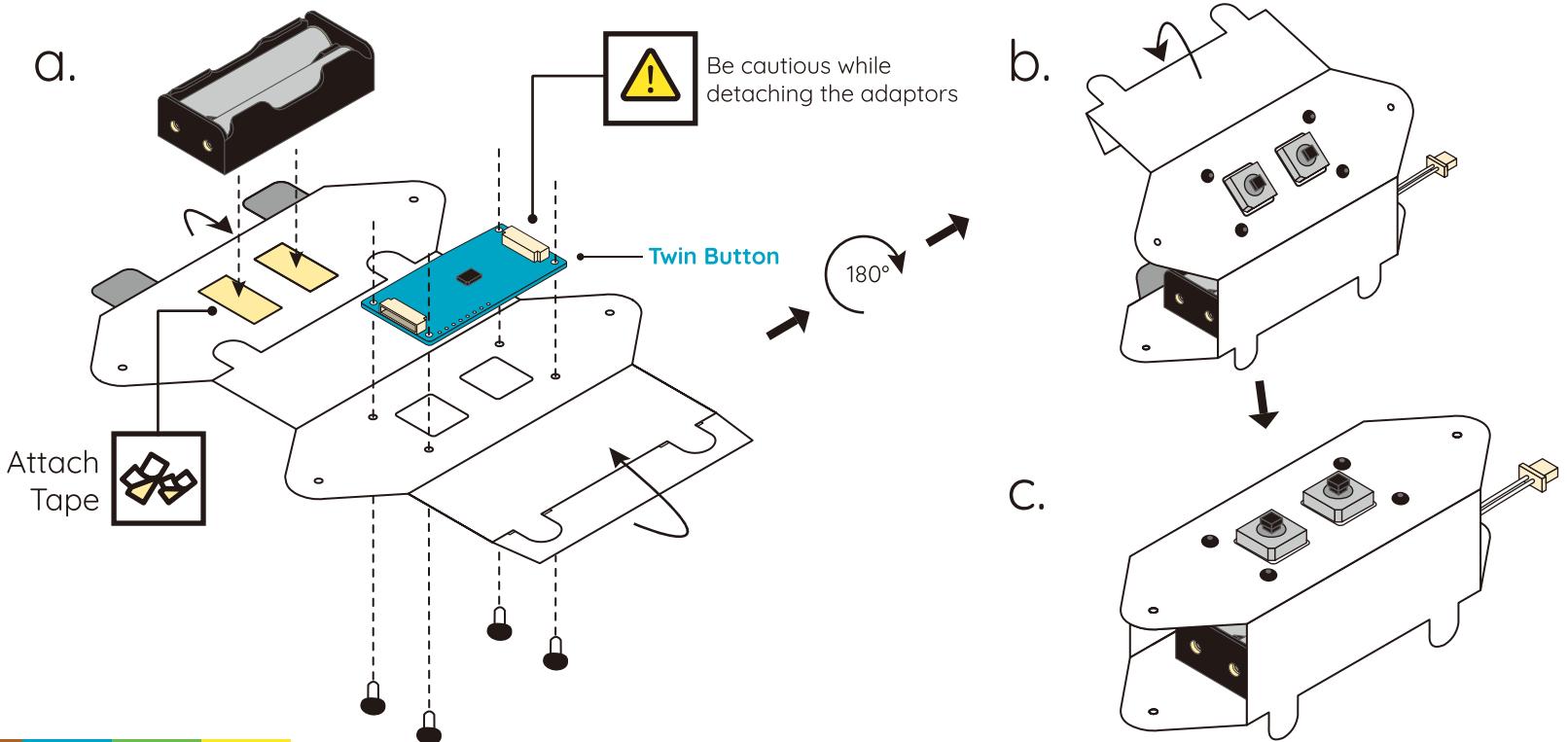


Back of Adhesive Area  
Adhesive Area  
Plastic Rivet  
Insert Part

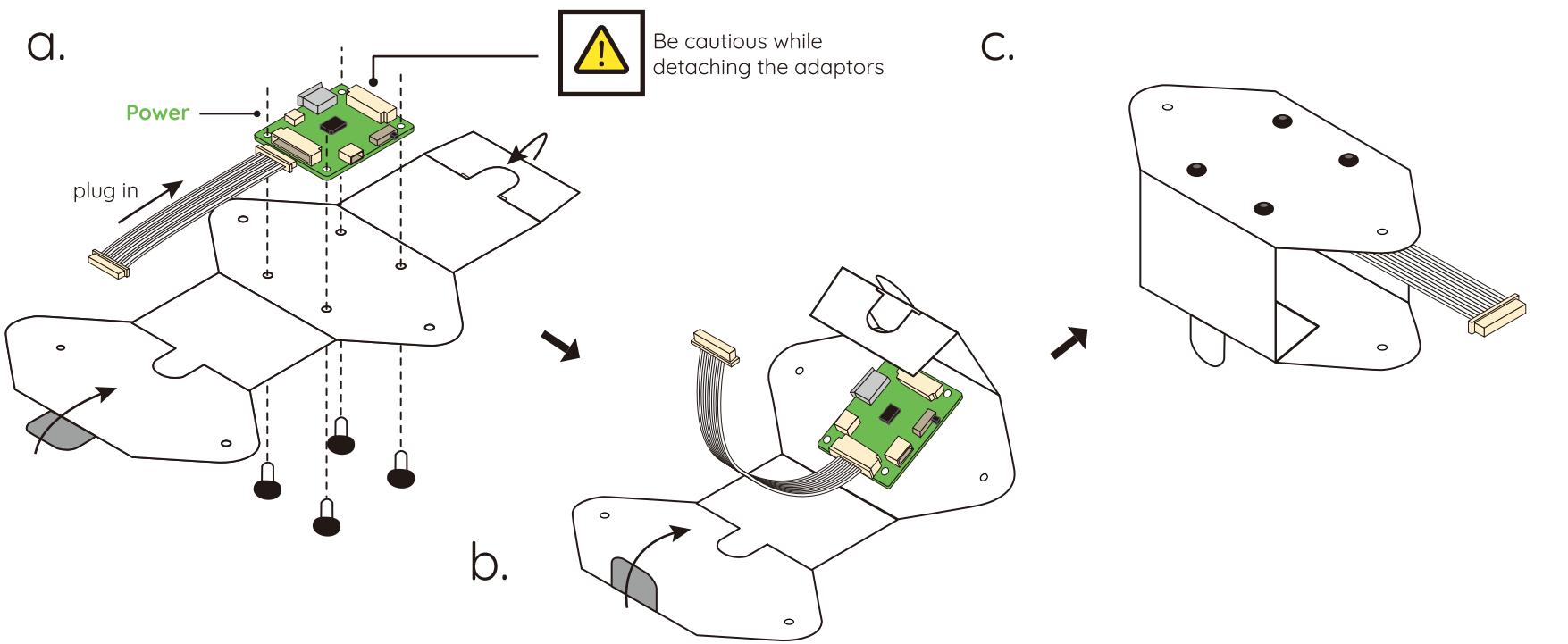
## 3. Assemble the worm chest - Template 4 (Part B)



Plastic Rivet  
Adhesive Area  
Insert Part

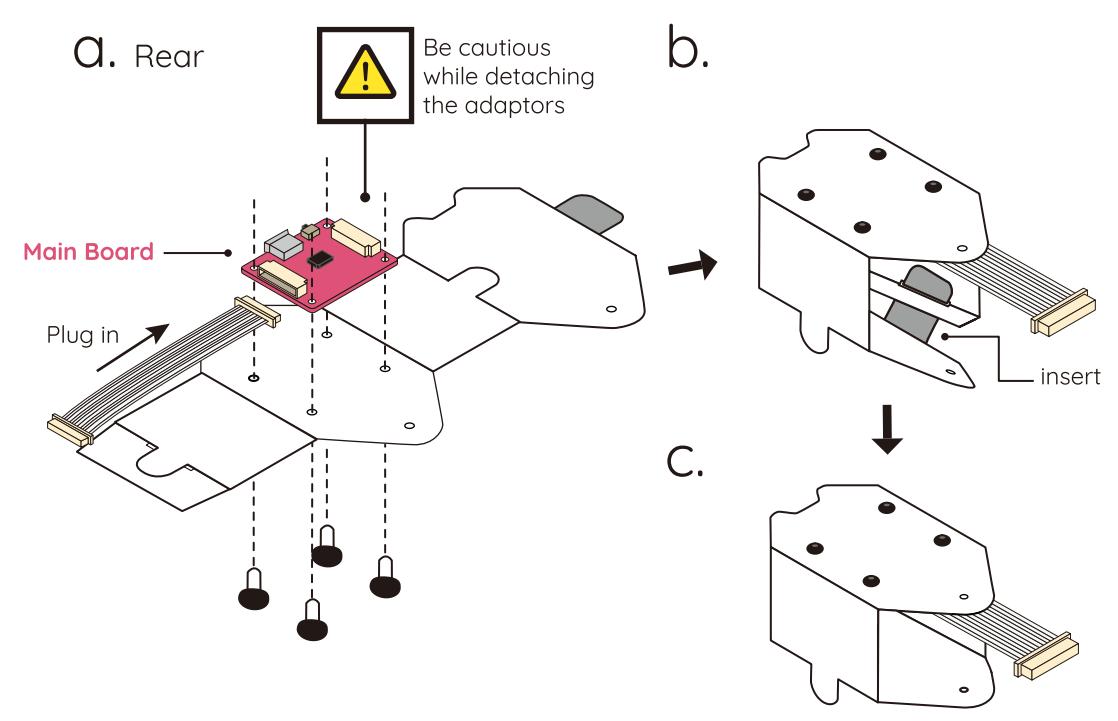


4. Assemble the worm belly - Template 4 (Part C)



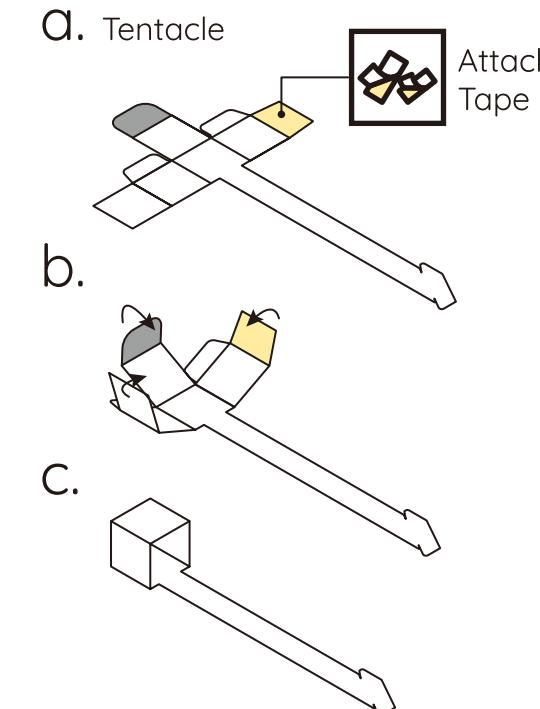
Plastic Rivet Insert Part

5. Assemble the worm rear & tentacle - Template 4 (Part D&E)



Adhesive Area

Insert Part



Plastic Rivet

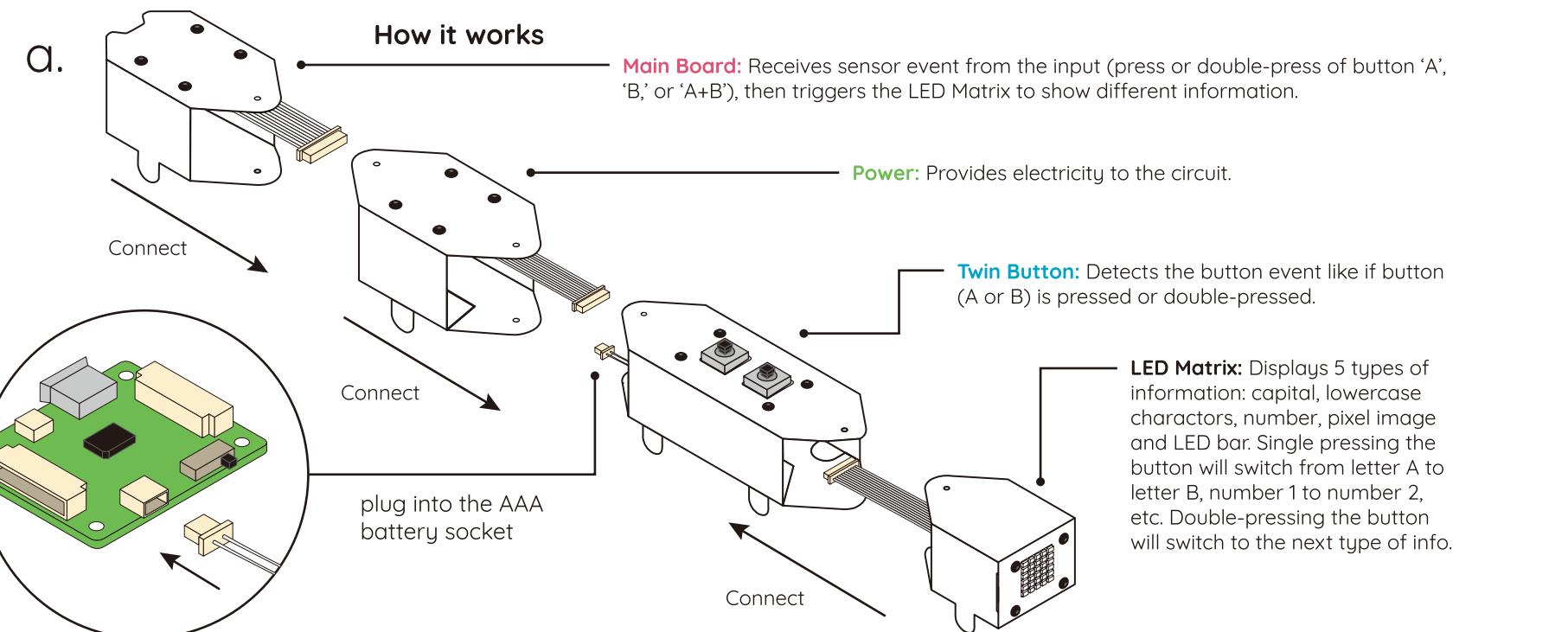
Insert Part

Adhesive Area

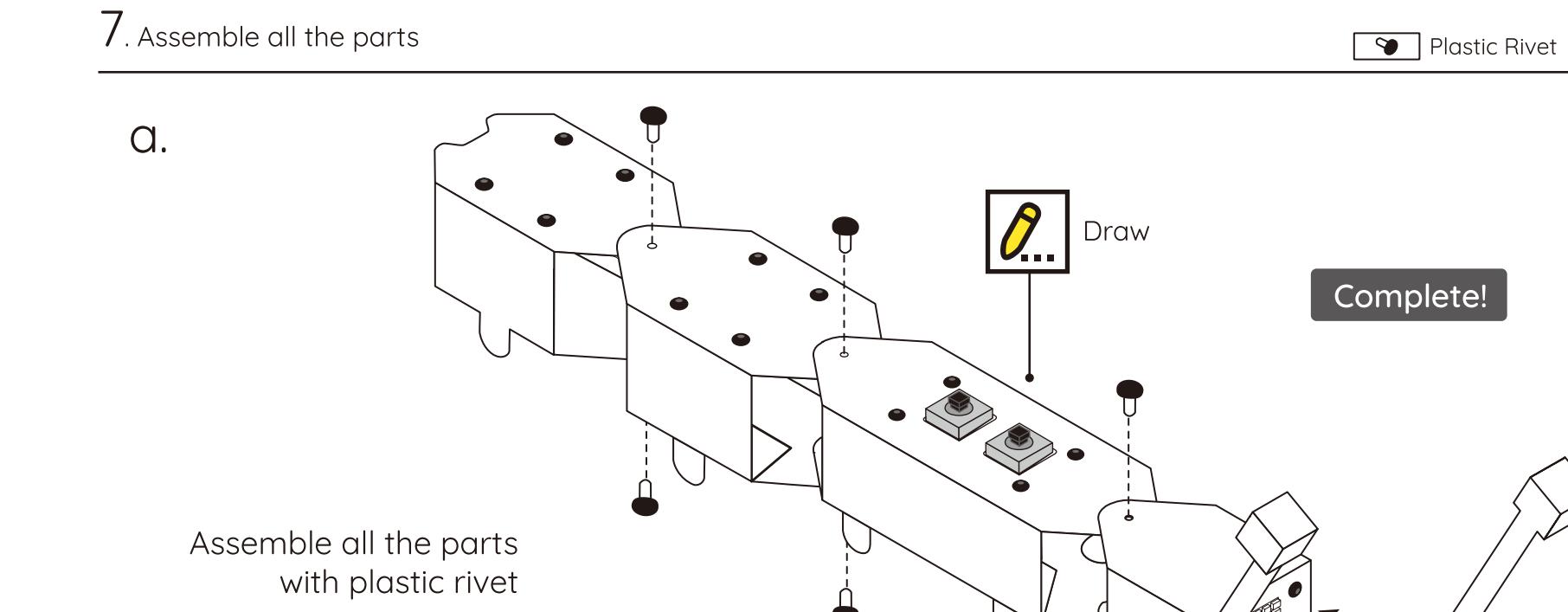
Insert Part



## 6. Connect the modules and 'How it works'



## 7. Assemble all the parts

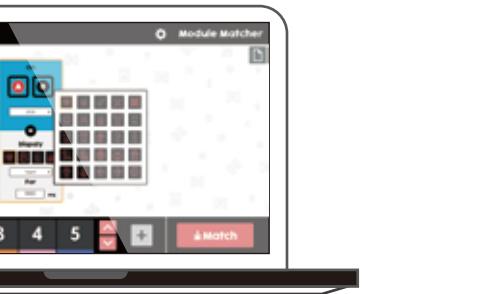
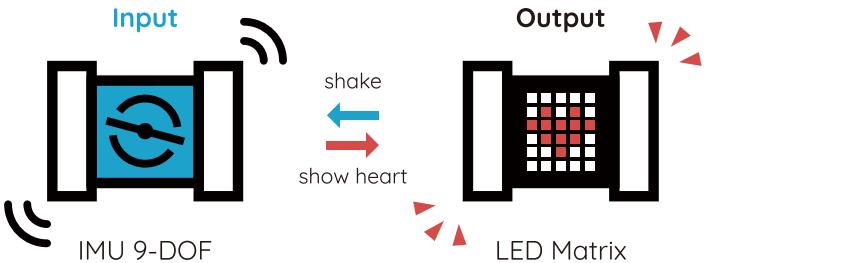




## Module Matcher

An entry-level, computer-based app to help you learn the basics of coding as well as practice your logical thinking. You can make simple projects very easily and quickly, just by pairing up the actions of an input and the reactions of an output.

### Actions and Reactions



### Compatible with:



Windows

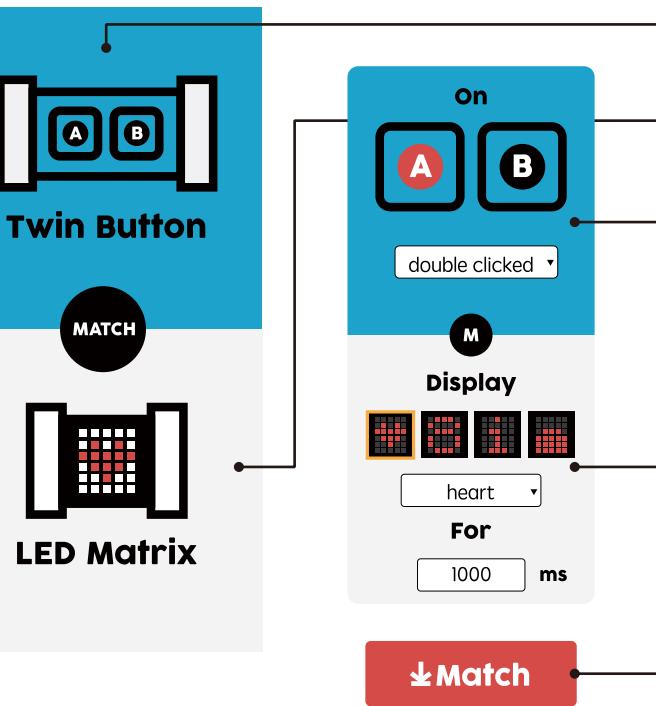


Mac

Download for free at

[www.seeedstudio.com/software/grove-zero](http://www.seeedstudio.com/software/grove-zero)

## Tinker your creations with Module Matcher



1. Select **Input** Module
2. Select **Output** Module
3. Set the **Actions** of input  
The action of an input refers to a specific event that happens on the input or simply read the data of a sensor module.
4. Set the **Reactions** of output  
Make the output module responds to the actions of input.
5. Click **Match** to complete

### Do you know?

In programming, the actions and reactions of modules are actually the parameters in functions.

### Function

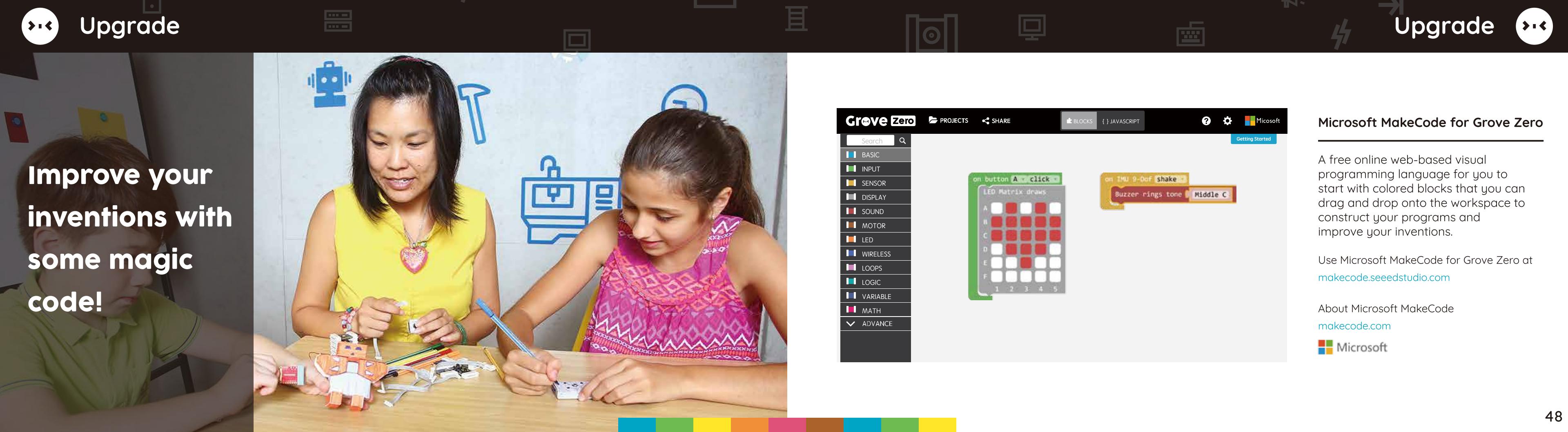
The function is a type of procedure or routine designed to do a specific task. They are the 'what to do'.

Like:  
Read the sensor data, or detect if the button is clicked.

### Parameters

A parameter is a special kind of variable used in the function, they tell the functions 'how to do what they do'.

Like:  
Detect actions of button A (not B), show heart (not arrows) on LED Matrix.



## Microsoft MakeCode for Grove Zero

A free online web-based visual programming language for you to start with colored blocks that you can drag and drop onto the workspace to construct your programs and improve your inventions.

Use Microsoft MakeCode for Grove Zero at  
[makecode.seeedstudio.com](http://makecode.seeedstudio.com)

About Microsoft MakeCode  
[makecode.com](http://makecode.com)

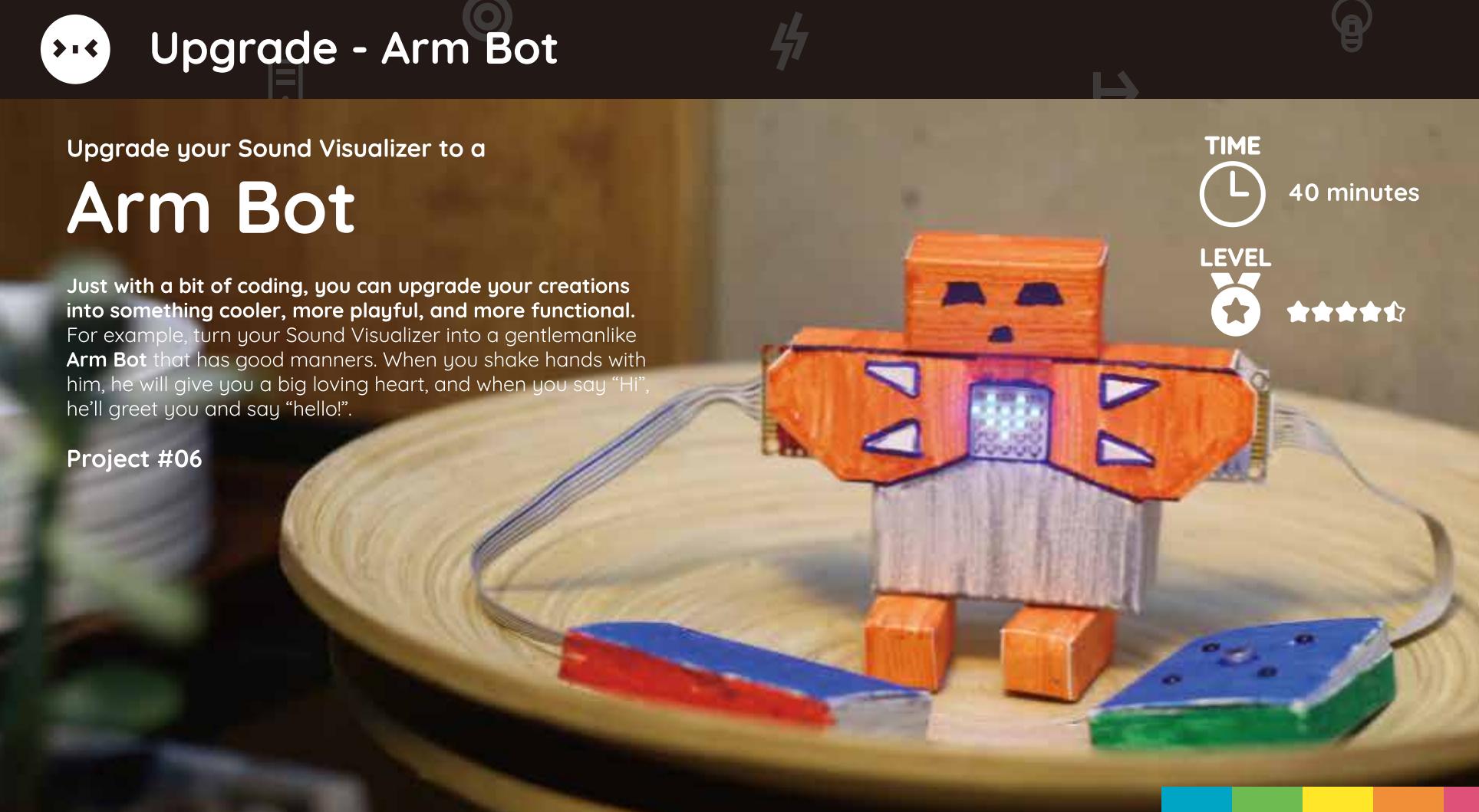


# Upgrade your Sound Visualizer to a **Arm Bot**

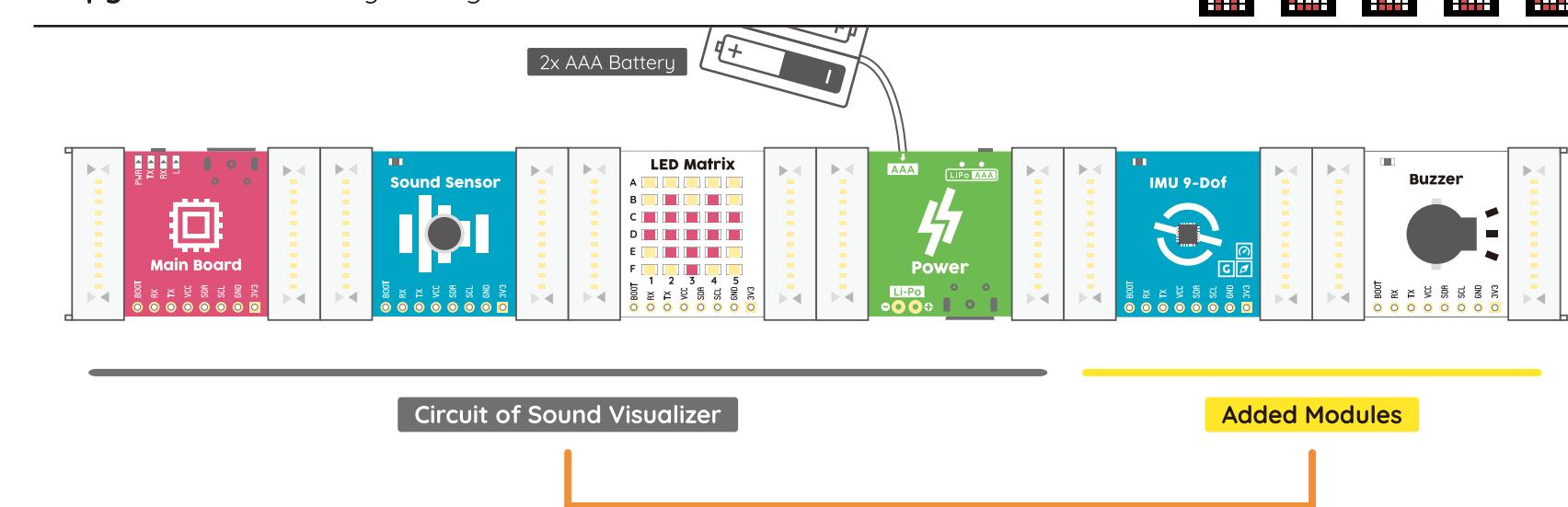
**Just with a bit of coding, you can upgrade your creations into something cooler, more playful, and more functional.**

For example, turn your Sound Visualizer into a gentlemanlike **Arm Bot** that has good manners. When you shake hands with him, he will give you a big loving heart, and when you say “Hi”, he’ll greet you and say “hello!”.

Project #06



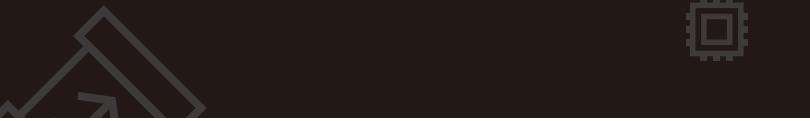
**1. Upgrade the circuit** by adding more modules



# Arm Bot



## Upgrade - Arm Bot



## Upgrade - Arm Bot



### 2. Upgrade the program using Microsoft MakeCode



#### Think...before you code

#### How will the modules work in this project?

**Main Board:** Runs the code you put in, deals with sensor data from the input or sensor module, then tells the output ‘what to do’ and ‘how to do it’.

**1 IMU 9-DOF:** As part of the Arm Bot’s hand to detect if there is a ‘shake’ event happening (when you are shaking hand with Arm Bot.)

**2 Sound Sensor:** Detects the sound intensity around the Arm Bot. When someone says “hi”, then sensor might sense a ‘Loud’ environment.

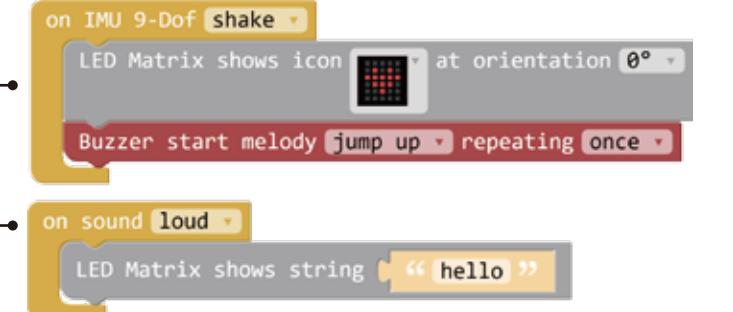
**LED Matrix:** Displays a big ‘heart’ when IMU 9-DOF senses a ‘shake’ event, displays text “hello” when sound sensor detects a ‘Loud’ environment.

**Buzzer:** Plays melodies when there is a ‘shake’ or ‘Loud’ event.

**Power:** Provides electricity to the circuit.



#### Now you have your program



#### Tips:

You can change the ‘Loud’ or ‘Quiet’ threshold of your sound sensor as follows. **DO NOT** put the ‘set sound/light/temperature threshold’ blocks under a ‘forever’ loop as it works by reflashng the firmware and includes a 3 seconds delay (to protect the MCU of sensor.).

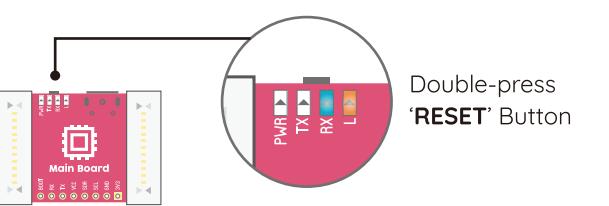


### 3. Download the code to your Main Board

a. Click the ‘Download’ button to download your code.



C. Double-press the ‘RESET’ button on your Main Board to enter the removable disk named ‘Grove Zero’. Meanwhile the blue ‘RX’ LED and orange ‘L’ LED will keep flashing rapidly.



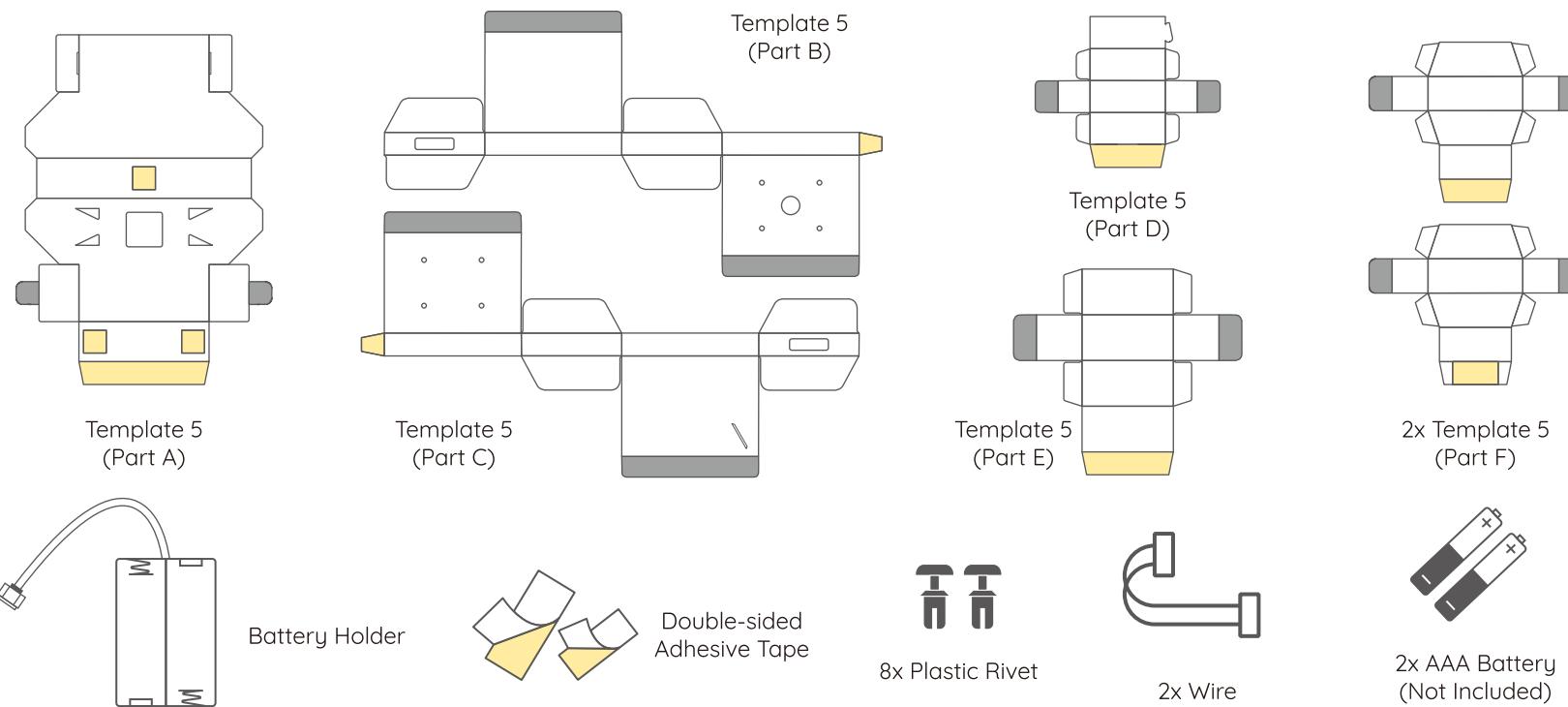
b. Then you can see a file named ‘test-01.uf2’ (or other names you picked) just been downloaded.



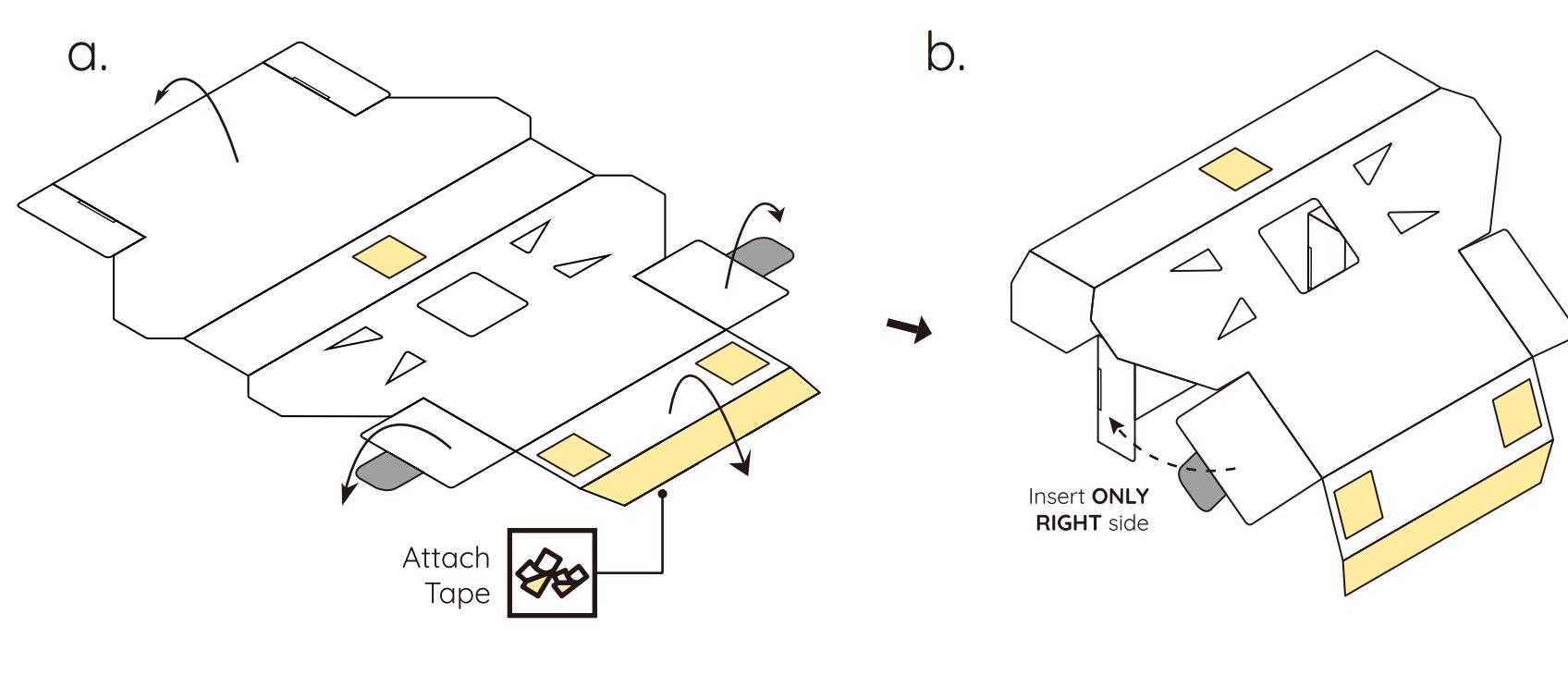
d. Now simply drag the file ‘test-01.uf2’ that you just downloaded into the removable disk.



#### 4. Upgrade the appearance with papercraft



#### 5. Assemble the chest of Arm Bot - Template 5(Part A)

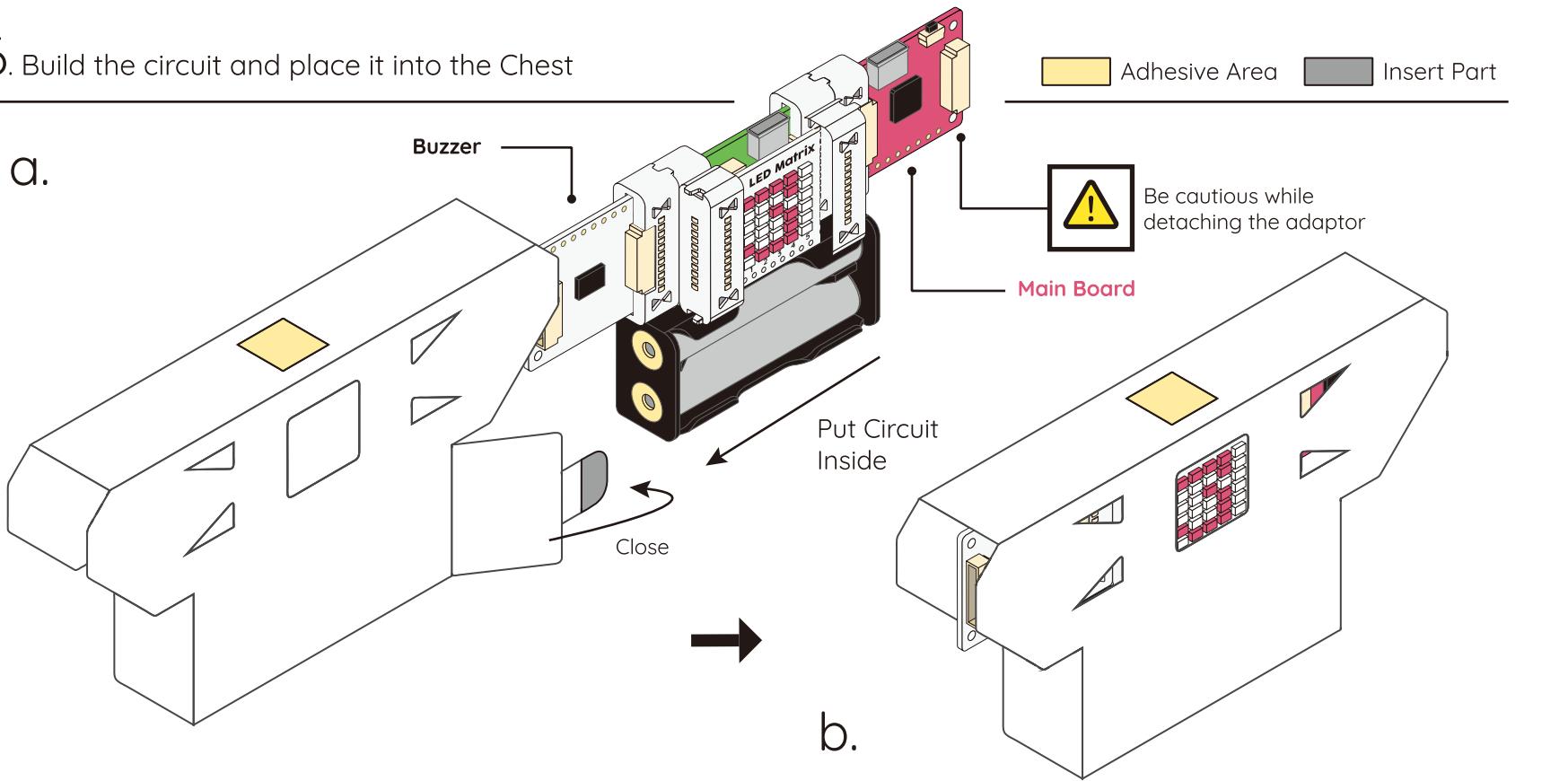




# Upgrade - Arm Bot

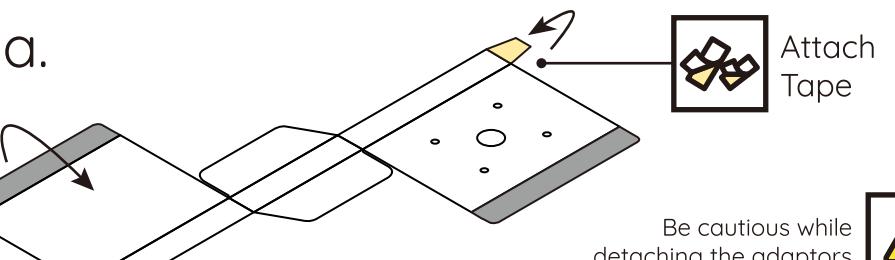
6. Build the circuit and place it into the Chest

a.

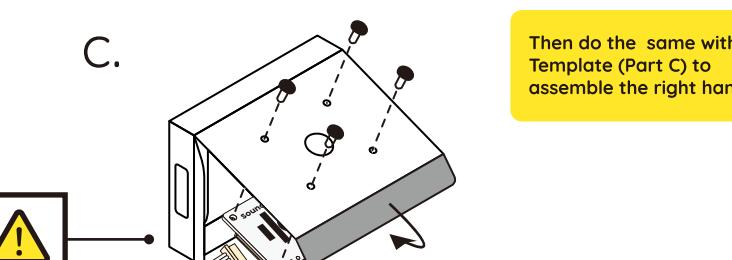


7. Assemble left hand - Template 5 (Part B)

a.



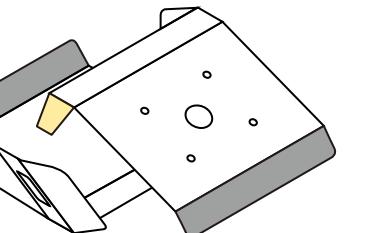
C.



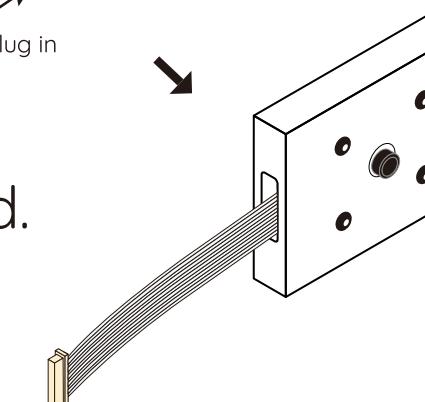
Plastic Rivet  
Insert Part

Then do the same with Template (Part C) to assemble the right hand.

b.



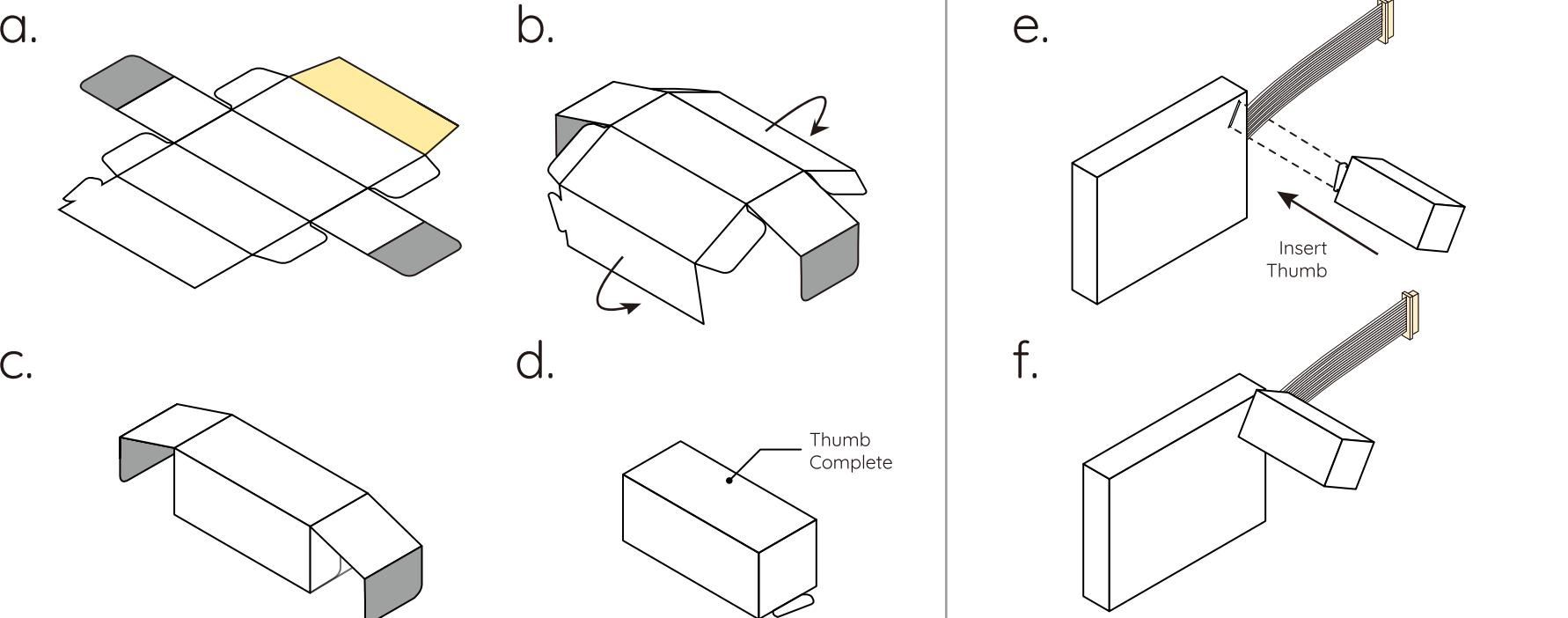
d.





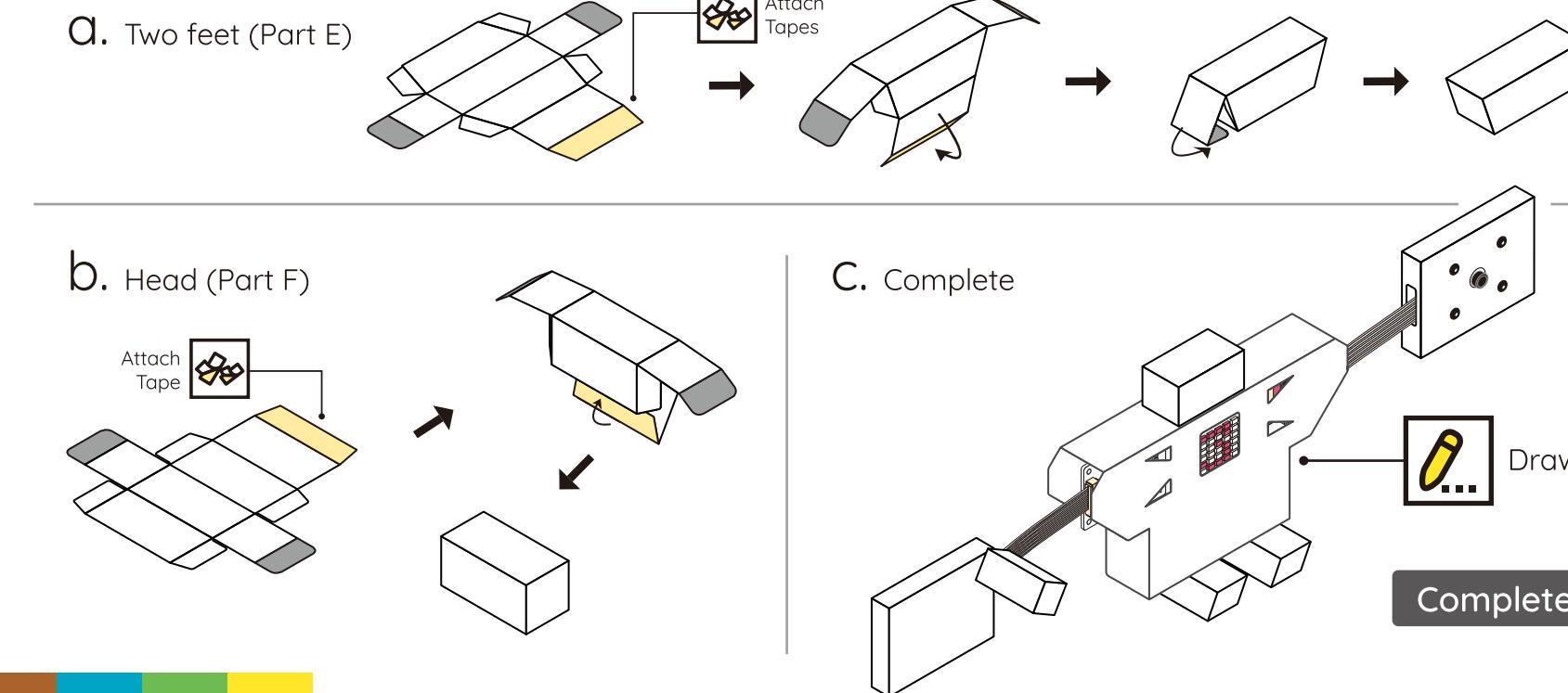
## 8. Assemble thumb of left hand - Template 5 (Part D)

Adhesive Area   Insert Part



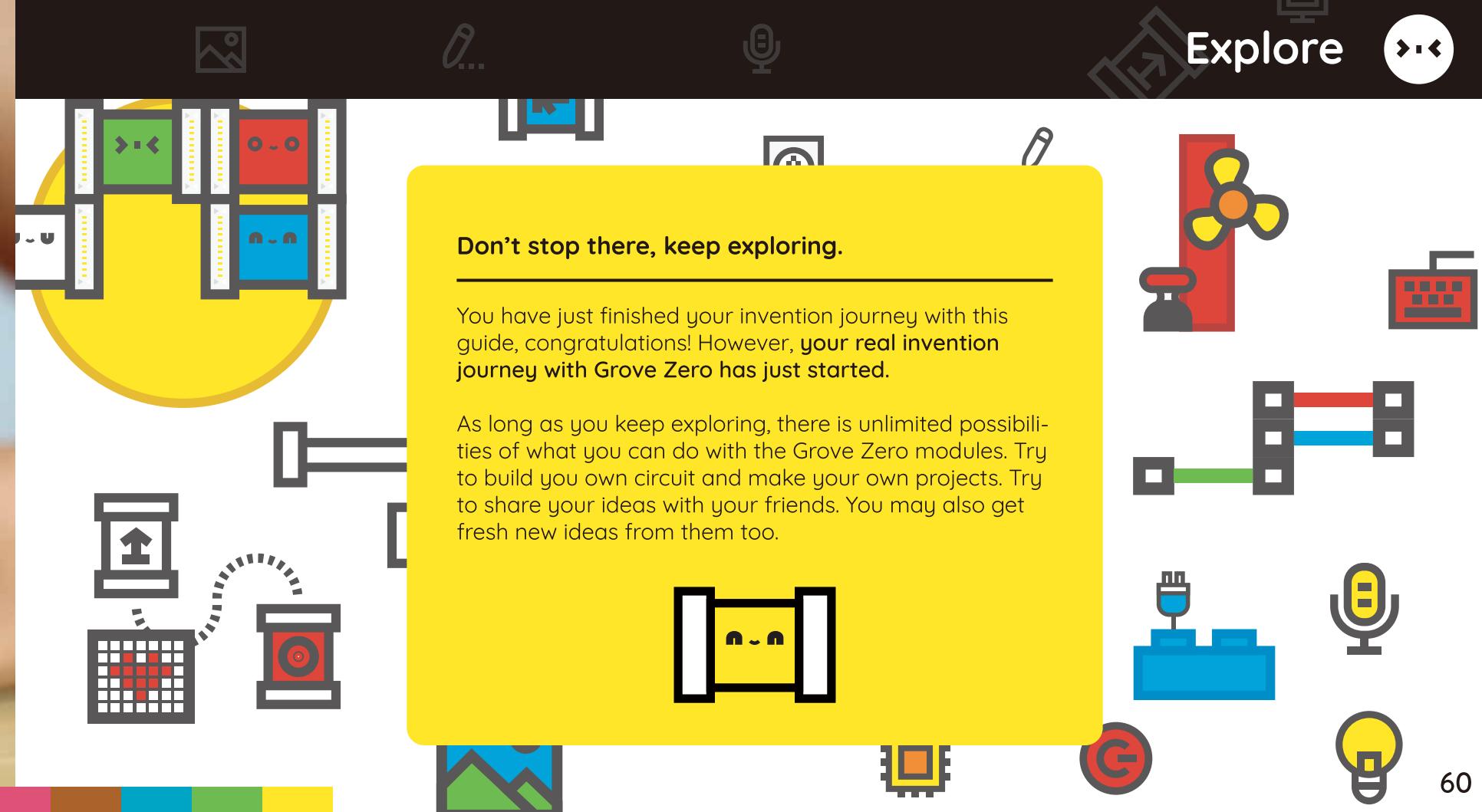
## 9. Assemble the rest and complete

Adhesive Area   Insert Part





# KEEP Exploring



## Circuit does not work

- Try to reset the circuit by single clicking the reset button on the Main Board.
- Check the LED Indicator labeled 'L' on your Main Board, see if you have accidentally double-clicked the reset button and entered the 'removable disk', see **PG 52**. If you do, double-click it again to exit.
- Check your battery, see if it is out of charge.
- Check your connections, make sure the magnetic connectors are aligned and the contacts are not shorted.

## Notice

The Grove Zero Modules may occasionally be updated in the future, along with the guide. So the modules you possess may differ from what's written or illustrated in this guide.

Find the latest version at:

[www.seeedstudio.com/guidance/grove-zero](http://www.seeedstudio.com/guidance/grove-zero)

## Contact us for help

If you have any questions, you can always send an email to:

[techsupport@seeed.cc](mailto:techsupport@seeed.cc)

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.

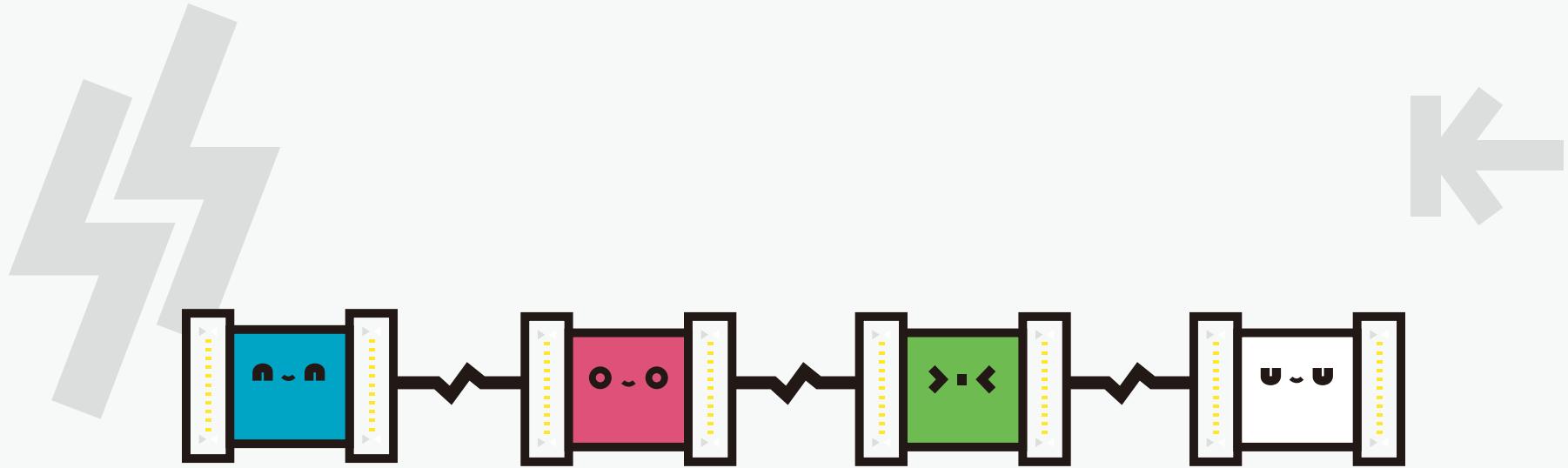
**Warning:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.





Responsible Party in USA:

Legal Company Name: Seeed Inc

Address: The Gate, Suite 266, 1933 Davis  
Street, San Leandro, California, USA

Phone: (408)887-0729

Contact Person: Erin Linke

Product Name: Grove Zero STEM Starter Kit

Model Number: Grove Zero STEM Starter Kit

Brand: Grove Zero

Manufacturer: Seeed Technology Co., Ltd.



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