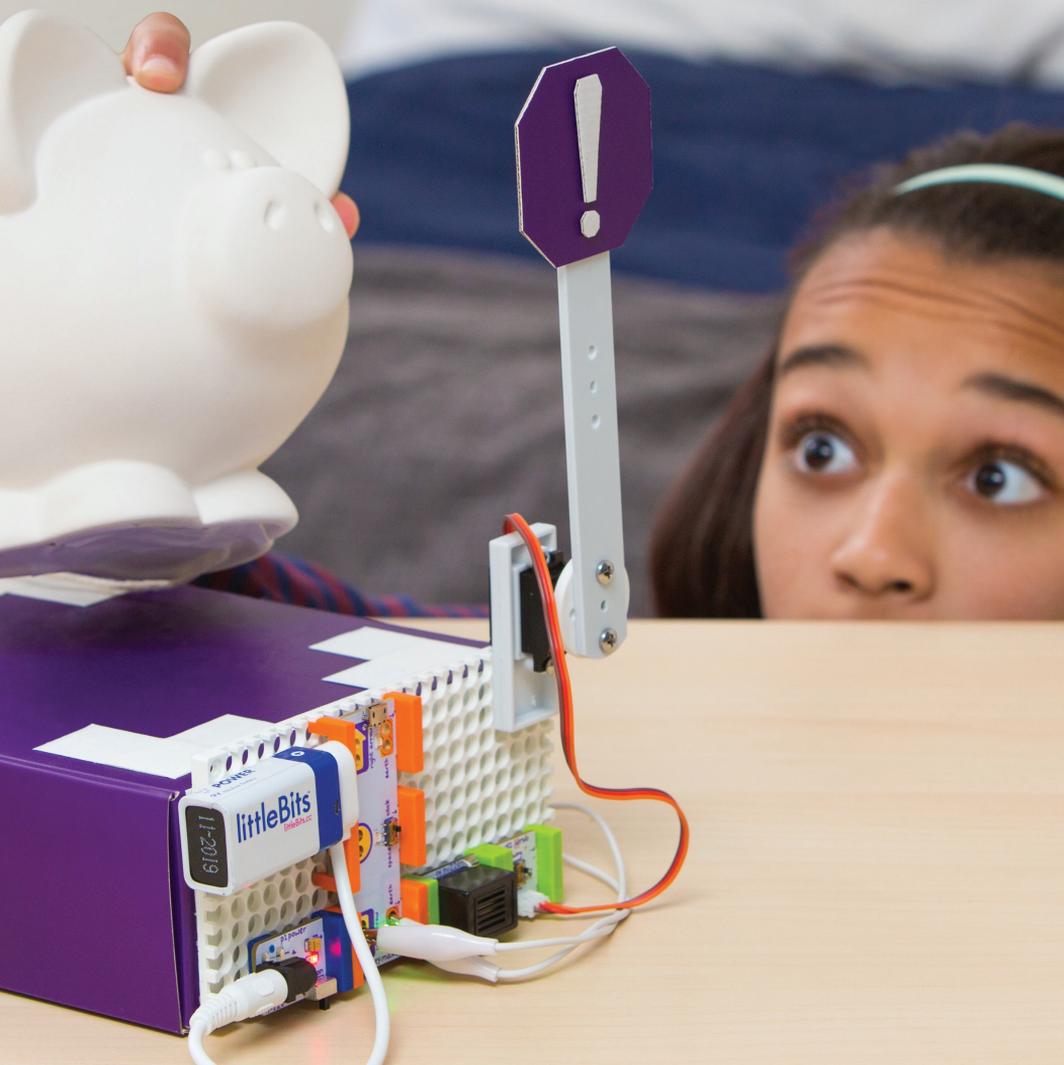


littleBits™

RULE YOUR ROOM KIT

INVENTION GUIDE



littleBits™

RULE YOUR ROOM KIT

INVENTION GUIDE

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Start building creations with step-by-step instructions for five inventions. You'll get ideas for how to put your own spin on each invention, and before you know it, you'll be creating your own from scratch.

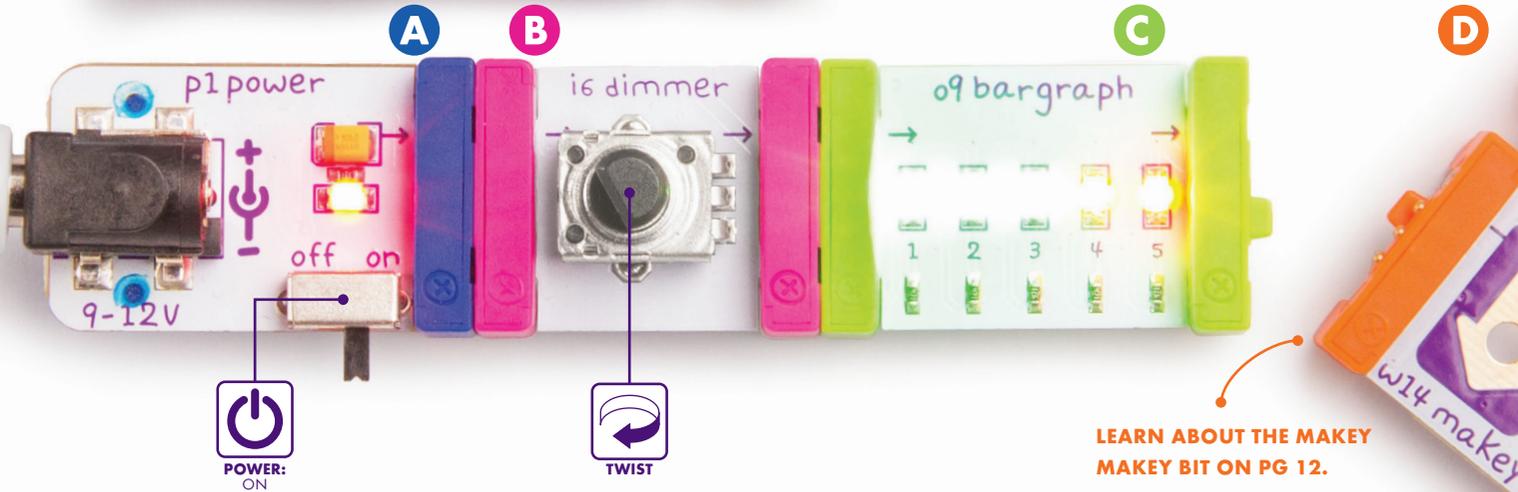
 - 26** Creepy Eyeballs
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Challenges get you to flex your creative muscles. They start with an open-ended problem. Your mission is to explore how you could use your Bits™ to create an invention that solves that problem.

 - 70** Invent a Kitchen Contraption
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littleBits™ BASICS

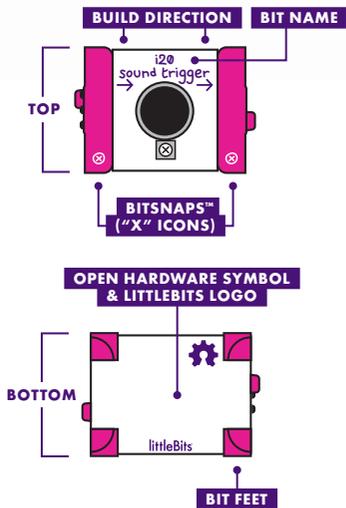
BUILD & PLAY
WITH THIS
CIRCUIT FIRST



LEARN ABOUT THE MAKEY
MAKEY BIT ON PG. 12.

1 ANATOMY OF A BIT™

Learn how you can tell top from bottom.



2 COLOR-CODED BY FUNCTION™

Bits™ are grouped into four different categories, which are color-coded.

A POWER (BLUE): Power Bits, plus a power supply, run power through your circuit.

B INPUT (PINK): Input Bits accept input from you or the environment and send signals that affect the Bits that follow.

C OUTPUT (GREEN): Output Bits do something – light up, buzz, move...

D WIRE (ORANGE): Wire Bits connect to other systems and let you build circuits in new directions.

CAUTION: PARENTAL SUPERVISION AND ASSISTANCE MAY BE REQUIRED FOR SAFE USE OF COMPONENTS

3 MAGNET MAGIC!

Bits snap together with magnets. The magnets are always right – you can't snap them together the wrong way.

ARROWS SHOULD POINT IN THE SAME DIRECTION



IF THE BITS WON'T SNAP TOGETHER, TRY SPINNING ONE AROUND AND MAKE SURE THE ARROWS POINT IN THE SAME DIRECTION



4 ORDER IS IMPORTANT

POWER BITS always come first and **INPUT BITS** only affect the **OUTPUT BITS** that come after them.

WITH NO OUTPUT BIT AFTER IT, THE INPUT BIT HAS NOWHERE TO SEND ITS SIGNAL



THE INPUT BIT AFFECTS THE OUTPUT BITS THAT FOLLOW



LET THE GAMES BEGIN!

UNLOCK CHALLENGES, INVENTIONS, AND FUN ON THE APP.



+ 1000'S MORE ON THE APP!



1

GET THE FREE APP.

Create your account to make it official.



2

FIND MORE FUN.

See tons of cool inventions you can build with your kit.

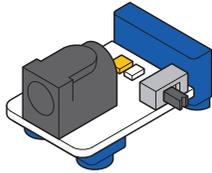
3

ENTER YOUR FIRST CHALLENGE.

You could win free stuff!

*APP MAY DIFFER FROM SCREENSHOTS SHOWN.

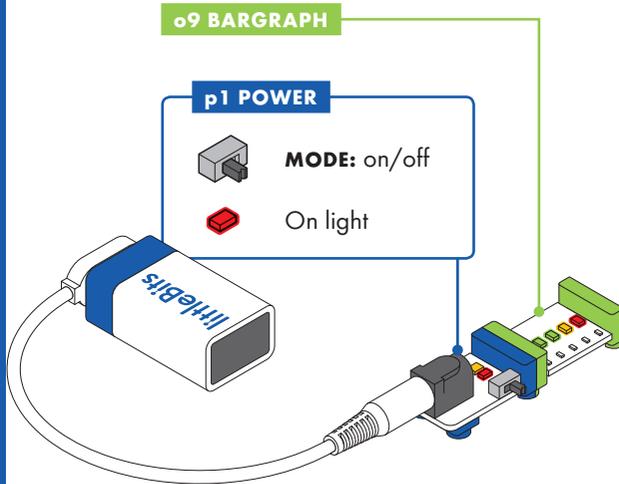
p1 POWER



MEET THE BIT™

Every circuit starts with power. It provides the juice that makes your Bits™ spin, buzz, blink, and shine.

SAMPLE CIRCUIT



HOW IT WORKS

The power Bit converts the 9 volts of electricity in the battery to the 5 volts that littleBits™ circuits run on. The power Bit also sends a signal through your circuit. Manipulating this signal with inputs is how you control your circuit.

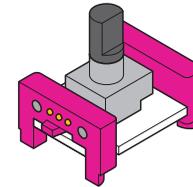
The p1 power is for use only with a 9 volt battery.

REAL WORLD ANALOGIES



PHONE CHARGER

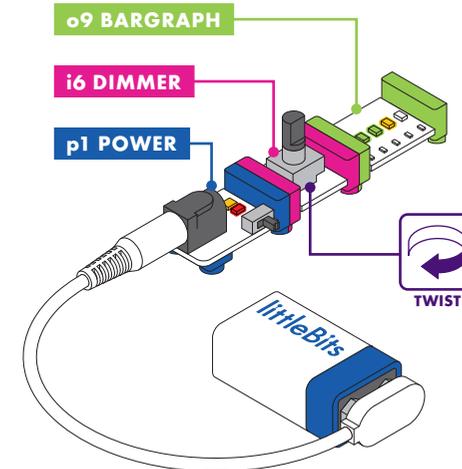
i6 DIMMER



MEET THE BIT

Twist this dimmer back and forth to control your circuit. As you twist the knob clockwise, more signal goes to the Bits that follow, brightening lights, speeding up motors, or raising the volume on buzzers.

SAMPLE CIRCUIT



HOW IT WORKS

The dimmer is like the knob on a water faucet. The more you turn the knob, the more the water flows from the faucet. The dimmer is similar – the more you twist it clockwise, the more electrical signal it lets through.

MINI-CHALLENGE

Can you invent something that waves a flag back and forth? How could you change the speed it waves?

REAL WORLD ANALOGIES

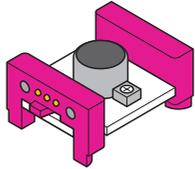


HOUSEHOLD DIMMER SWITCH



STEREO VOLUME CONTROL

i20 SOUND TRIGGER



MEET THE BIT

Use this Bit to control your circuits with sound! The sound trigger listens to the noise level in your room, and sends an **ON** signal when it gets over a certain level. Try it with a Bit that lights up to create a circuit that responds to the snap of your fingers.

SAMPLE CIRCUIT

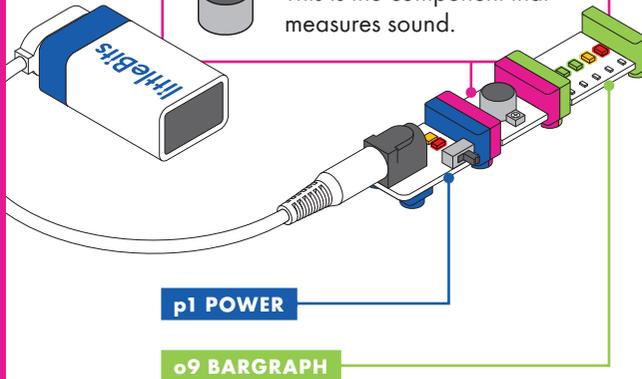
i20 SOUND TRIGGER



SENSITIVITY: "-" decrease, "+" increase.



This is the component that measures sound.



HOW IT WORKS

The sound trigger has a microphone that measures how much noise is around it. When the noise gets to a certain level, the sound trigger will let the signal from the previous Bits through for three seconds. Use the adjustment dial to set what noise level you'd like the Bit to be triggered at.

MINI-CHALLENGE

Can you invent a notification that tells you when it gets too loud?



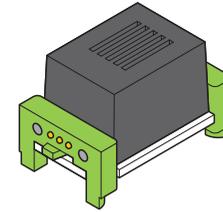
CLAP ON LIGHT



HUMAN EAR

REAL WORLD ANALOGIES

o6 BUZZER



MEET THE BIT

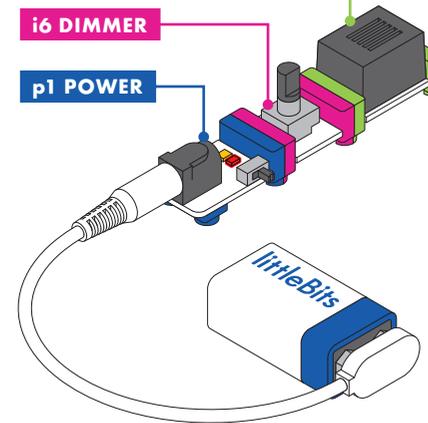
The buzzer makes a sound no one can ignore. It's great at sounding the alarm or annoying those nearby.

SAMPLE CIRCUIT

o6 BUZZER

i6 DIMMER

p1 POWER



HOW IT WORKS

The buzzer converts the electrical signal it receives into a vibration, which creates a buzzing sound. The more signal it receives, the more intense the vibration, and the louder the sound is.

MINI-CHALLENGE

Can you invent a way to communicate with your friends using the buzzer?

REAL WORLD ANALOGIES

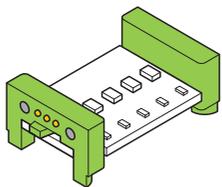


DOORBELL



CAR ALARM

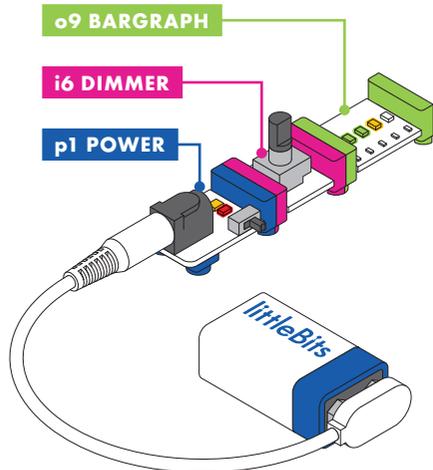
09 BARGRAPH



MEET THE BIT

The bargraph shows you how much signal the Bit is receiving with a display of five light-emitting diodes (LEDs) in different colors. Try it with a dimmer to make your own adjustable lamp.

SAMPLE CIRCUIT



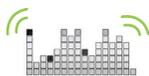
HOW IT WORKS

The bargraph uses five LEDs to turn electricity into light. Each LED on the board needs a certain amount of signal in order to light up. As you increase the signal sent to the bargraph, more LEDs will shine.

MINI-CHALLENGE

Can you invent a way to measure your mood?

REAL WORLD ANALOGIES

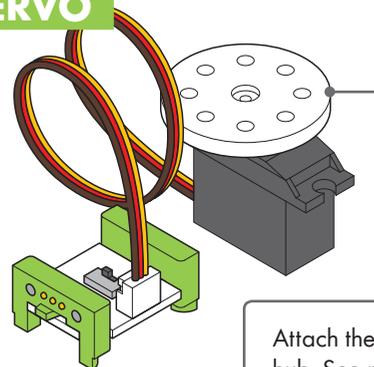


MUSIC VISUALIZER



TV VOLUME

011 SERVO



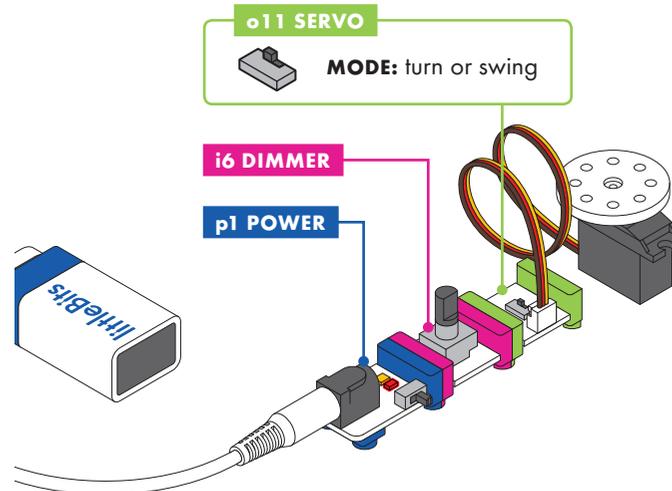
MEET THE BIT

The servo is a motor that can swing back and forth or be turned to a specific position.

There are a few accessories you can use with the servo (like the mechanical arm). You can find out how to use those on pages 17-19.

Attach the servo hub. See pg 17.

SAMPLE CIRCUIT



HOW IT WORKS

The servo has two modes. In **TURN** mode, the input from other Bits determines the position of the arm - try using a dimmer to set the angle you want. In **SWING** mode, the servo will move back and forth on its own like a pair of windshield wipers - the input signal controls the speed of the swing.

The arc of the servo's swing is about 110 degrees from one end to the other.

MINI-CHALLENGE

Can you invent something that uses the servo to clean up your desk?

REAL WORLD ANALOGIES

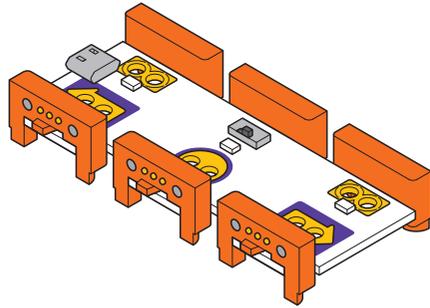


TRUCK CRANE



WINDSHIELD WIPERS

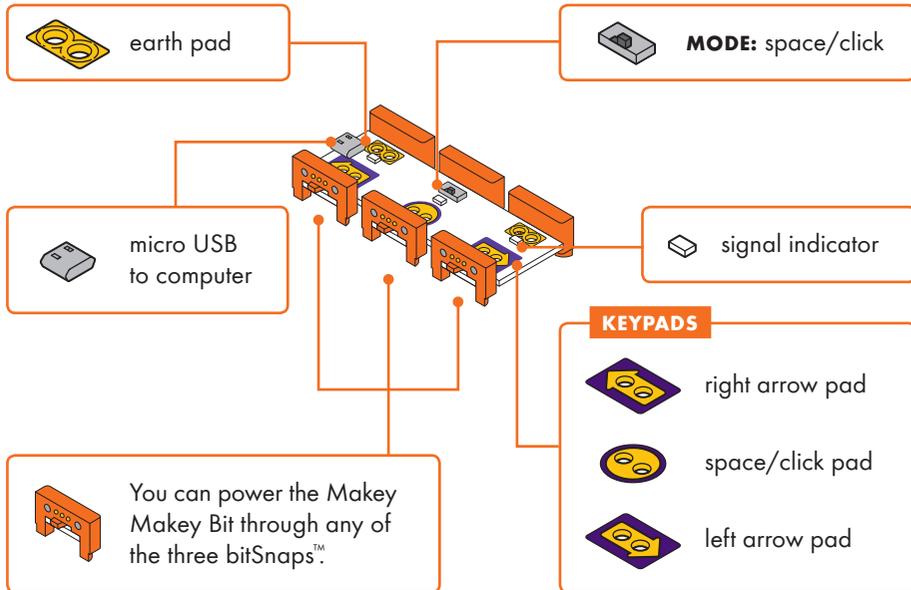
w14 MAKEY MAKEY® BIT



MEET THE BIT

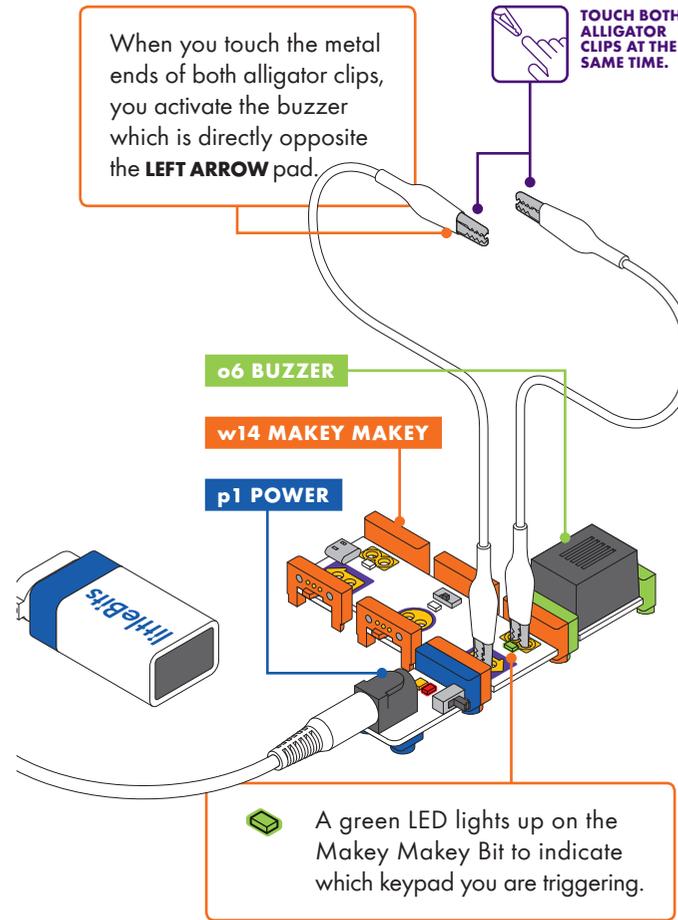
The Makey Makey Bit turns everyday conductive objects (like bananas) into triggers that control your circuit and even your computer. You can connect the Makey Makey Bit to these objects using alligator clips. Learn more about conductive materials on pages 24–25.

BIT BREAKDOWN



SAMPLE CIRCUIT #1

When you touch the metal ends of both alligator clips, you activate the buzzer which is directly opposite the **LEFT ARROW** pad.



HOW IT WORKS

The Makey Makey Bit sends an **ON** signal to the Bits that follow it when a keypad (**LEFT ARROW**, **SPACE/CLICK**, or **RIGHT ARROW**) is connected to either of the **EARTH** pads through a conductive material. In sample circuit #1, when you touch both alligator clips at the same time, electricity flows from the **LEFT ARROW** keypad to the **EARTH** pad, triggering an **ON** signal to the buzzer. This works because humans are conductive. Yes, even you!

NOTE: This Makey Makey Bit interaction requires you to connect a keypad (**LEFT ARROW**, **RIGHT ARROW**, **SPACE/CLICK**) to an **EARTH** pad through a conductive material.

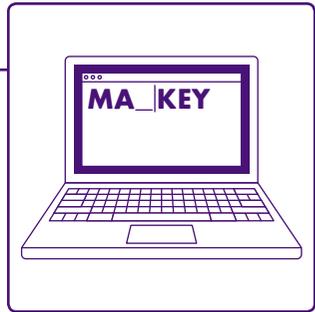
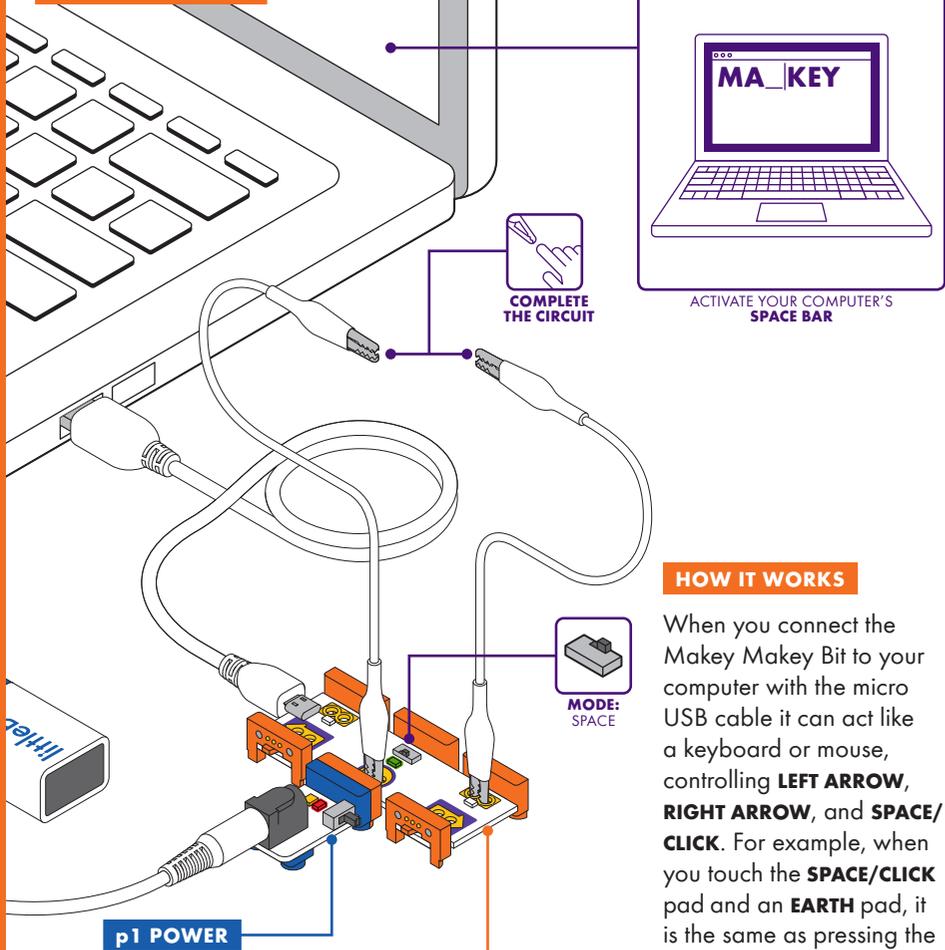
MINI-CHALLENGE

Can you invent a prank with the Makey Makey Bit? What conductive materials can you use to trigger the prank?

REAL WORLD ANALOGIES



SAMPLE CIRCUIT #2



ACTIVATE YOUR COMPUTER'S SPACE BAR



HOW IT WORKS

When you connect the Makey Makey Bit to your computer with the micro USB cable it can act like a keyboard or mouse, controlling **LEFT ARROW**, **RIGHT ARROW**, and **SPACE/CLICK**. For example, when you touch the **SPACE/CLICK** pad and an **EARTH** pad, it is the same as pressing the space bar or left click on your mouse.

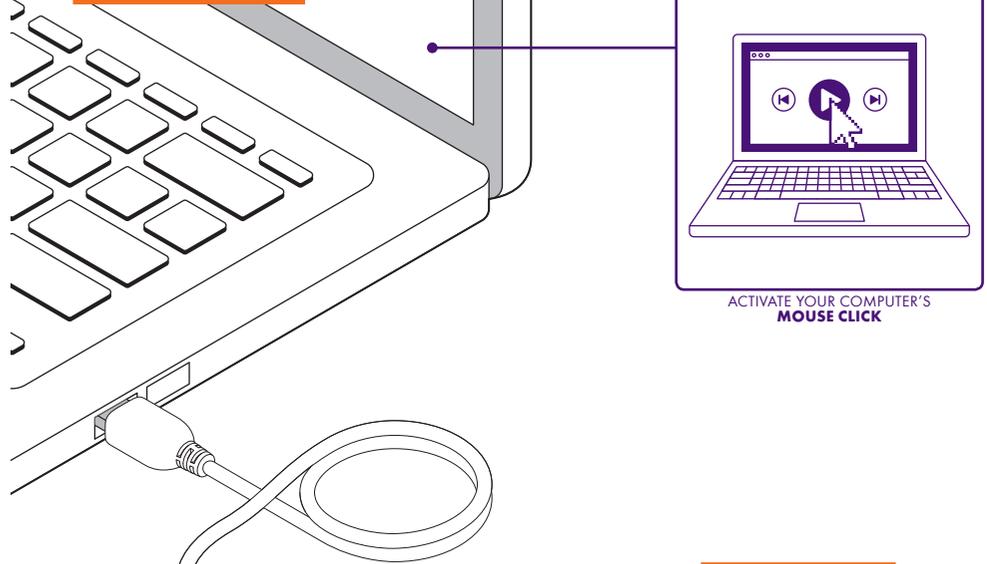
NOTE: This Makey Makey Bit interaction requires you to connect a keypad (**LEFT ARROW**, **RIGHT ARROW**, **SPACE/CLICK**) to an **EARTH** pad through a conductive material.

w14 MAKEY MAKEY

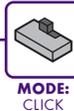


On the **SPACE/CLICK** pad, you can toggle the switch between **SPACE** (space bar) and **CLICK** (left click on your computer mouse) functionalities.

SAMPLE CIRCUIT #3



ACTIVATE YOUR COMPUTER'S MOUSE CLICK



HOW IT WORKS

You can use input Bits to control the keys on your computer through the micro USB cable. Each input bitSnap controls the keypad across from it on the Makey Makey Bit.

o9 BARGRAPH

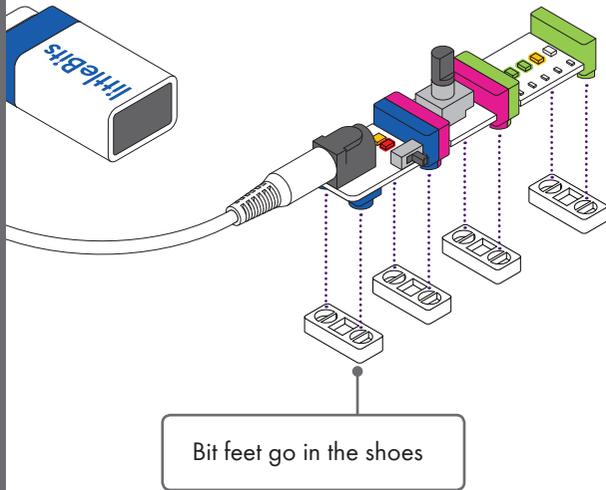
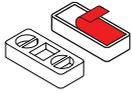
i20 SOUND TRIGGER

p1 POWER

w14 MAKEY MAKEY

When the Makey Makey Bit receives a signal from the sound trigger and bargraph, it will trigger the mouse click on your computer.

a7 ADHESIVE SHOES



MEET THE ACCESSORY

Shoes slip onto your Bits' feet and hold your circuit together. On the bottom of your shoes you'll find red adhesive backing you can peel off, which is great for securing your circuits to different surfaces.

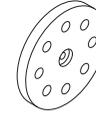
HOW IT WORKS

First snap together your littleBits circuit. Then press the feet of your Bits into the holes of the shoes and place your circuit on your chosen surface.

Adhesive shoes can be secured onto any surface – paper, cardboard, plastic – you name it! Just peel the adhesive backing off, and stick it on.

NOTE: The shoe adhesive is for one-time use only.

a19 SERVO HUB

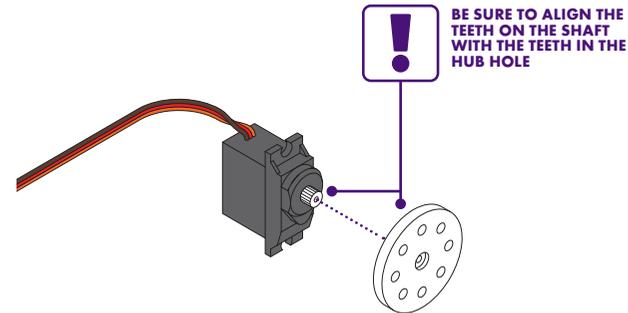


MEET THE ACCESSORY

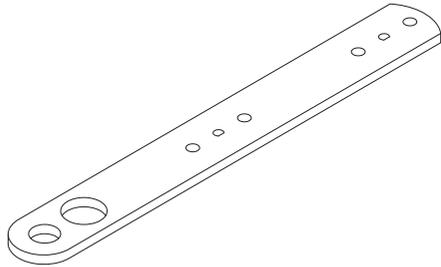
The servo hub lets you easily attach materials to your servo motor and add more complex movements to your littleBits inventions.

HOW IT WORKS

The servo hub can be removed by gently pulling it off the servo motor. This is helpful if you need to change how the holes are positioned for an invention.



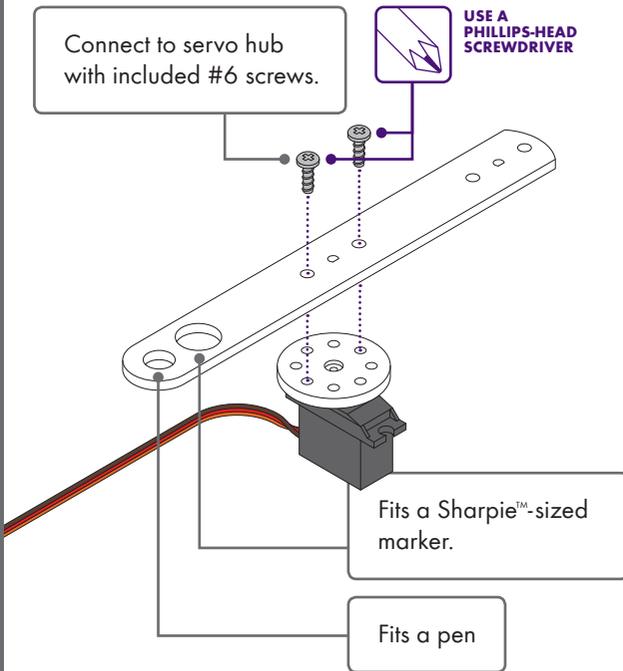
a23 MECHANICAL ARM



Connect to servo hub with included #6 screws.



USE A PHILLIPS-HEAD SCREWDRIVER



Fits a Sharpie™-sized marker.

Fits a pen

MEET THE ACCESSORY

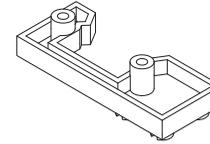
The mechanical arm attaches to both the servo hub and the DC motor (not included) shaft, and offers lots of leverage for pushing, pulling, and throwing.

HOW IT WORKS

To attach the mechanical arm to the servo hub, use two of the #6 screws (included) and a Phillips-head screwdriver (not the purple screwdriver). Be sure to screw through the holes on the servo hub.

The two large holes on the end are perfect for holding pens and markers in place.

a24 SERVO MOUNT

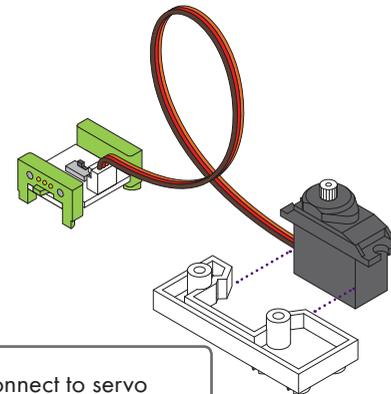


MEET THE ACCESSORY

The servo mount lets you attach your servo to a mounting board or a pair of littleBits shoes. It's a great way to keep the servo steady so the arm can go wild.

HOW IT WORKS

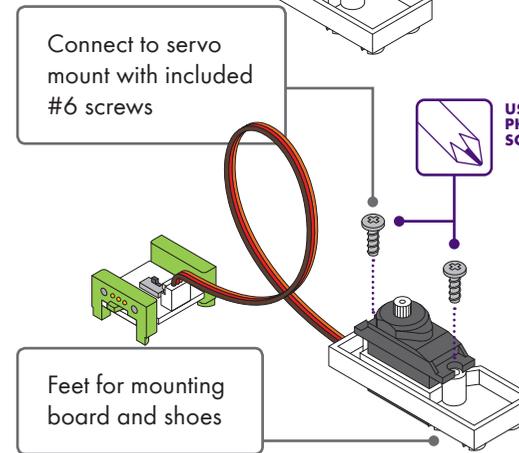
Push the servo in from the side until it clicks into place. To keep the servo from sliding up and down, use the included screws and a Phillips-head screwdriver.



Connect to servo mount with included #6 screws

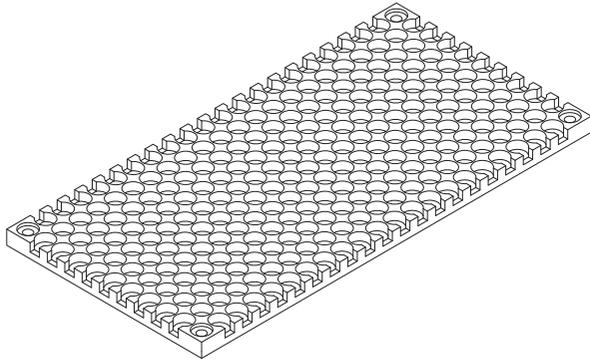


USE A PHILLIPS-HEAD SCREWDRIVER



Feet for mounting board and shoes

a26 MOUNTING BOARD



MEET THE ACCESSORY

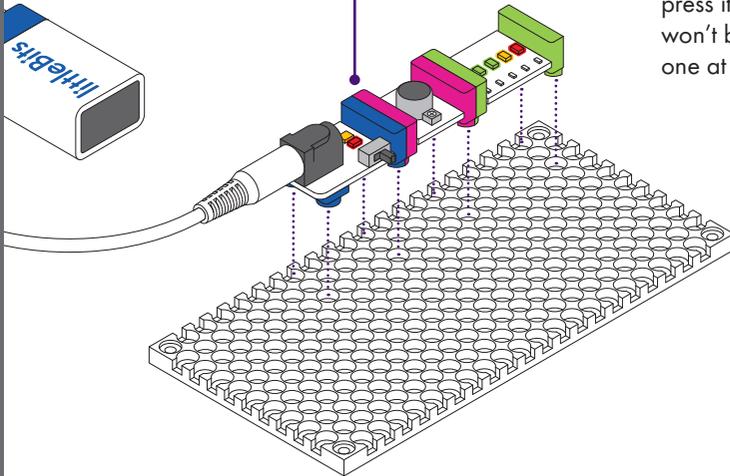
The mounting board is like the backbone of some of your inventions. It allows you to keep your circuit intact and move it around with ease! It also provides structure, which is helpful for building out inventions, like a vehicle.

HOW IT WORKS

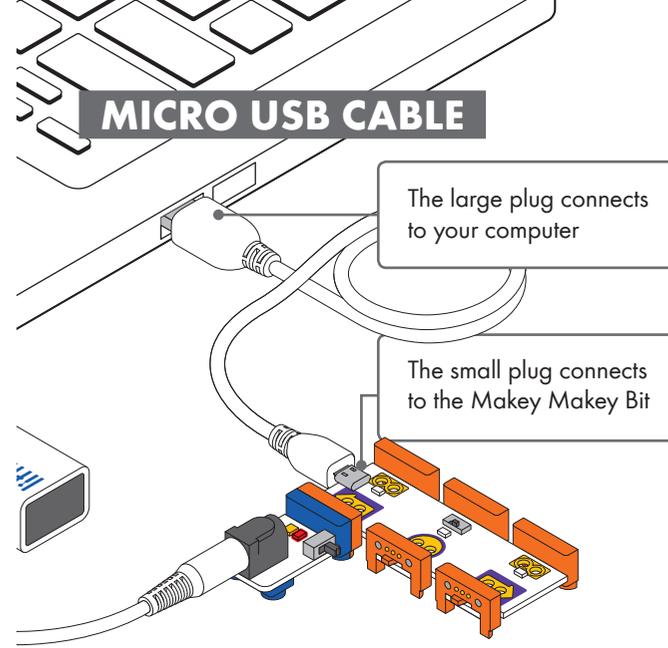
Snap together your littleBits circuit and press the feet of your Bits into the holes of the mounting board.

NOTE: Your circuit must be complete before you press it onto the board. You won't be able to add Bits one at a time.

! PRESS DOWN ON BITSNAPS, NOT WHITE CIRCUIT BOARD



MICRO USB CABLE



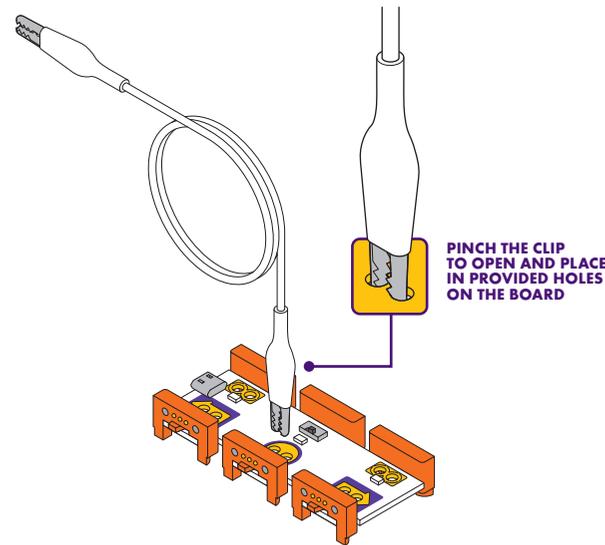
MEET THE ACCESSORY

Use the micro USB cable to connect the Makey Makey Bit to your computer.

HOW IT WORKS

The micro USB cable sends signal information between the Makey Makey Bit and the computer. For example, when you trigger the **LEFT ARROW** pad of the Makey Makey Bit, information is sent through the cable to control the **LEFT ARROW** key on the computer.

ALLIGATOR CLIPS



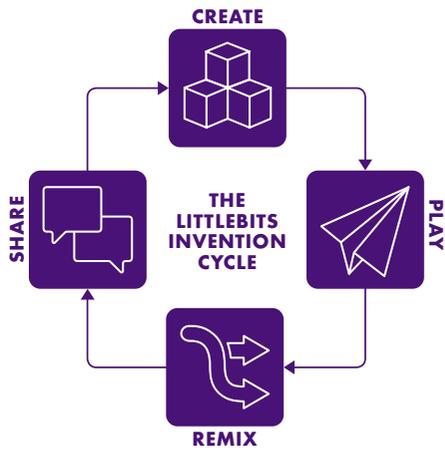
MEET THE ACCESSORY

The alligator clips let you connect the Makey Makey Bit to conductive materials.

HOW IT WORKS

Alligator clips extend the electrical signal beyond the Makey Makey Bit because the clips and wires are conductive. To connect to the Bit, pinch the plastic on the clip to open it and then place it into the holes on the board. The free end of the clip can be connected to a conductive material or object. For conductive material ideas, see page 25.

THE LITTLEBITS™ INVENTION CYCLE



CREATE

PUT SOMETHING TOGETHER. You can build it from the instructions or make something from your imagination. Don't worry if it doesn't work or if it isn't perfect. The important thing is to create your first prototype so you have something to experiment with.

PLAY!

USE IT! Playing with what you've created is fun, but also an important part of inventing. Playing is like a test run. It's a chance to see how well your invention works and look for ways you can make it better.

REMIX

IMPROVE YOUR INVENTION. Keep experimenting! Add new Bits™, swap parts with other inventions, or take all the pieces apart and put them together in a different way.

SHARE

INSPIRE OTHERS. Show the world what you've created on the littleBits Invent app. Get inspired by exploring what others have shared. Create, play with, and remix other inventions. This is how awesome new inventions are born.

WHAT IS THE INVENTION CYCLE? The Invention Cycle is a roadmap for your invention journey. Each phase is full of activities and questions that help you explore your ideas and develop your invention.

DO I HAVE TO GO THROUGH THE INVENTION CYCLE EXACTLY IN ORDER?

Nope! If you want, you can remix while you play, or share while you create. Each phase of the invention cycle represents a different way of thinking and making. They work well in order, but a good design process is always a bit messy.

ICON INDEX



POWER ON/OFF
The p1 power Bit™ has an on/off switch. This icon will let you know when it's time to turn it on or off.



PRO TIPS
Keep your eyes open for these bits of littleBits wisdom. These tips will help build your invention skills and level-up your inventions.



USE RUBBER BAND OR MASKING TAPE
This icon will tell you when to use rubber bands or some masking tape to keep something in place.



TEST YOUR CIRCUIT
Before you play with your new invention, you'll need to turn the power on and make sure all your Bits are doing their jobs.



EXTRA IMPORTANT INFO!
This icon will let you know when there is a small, but very important step we don't want you to miss. If you ignore these your invention won't work.



PHILLIPS-HEAD SCREWDRIVER
The metal screws included with your set require a Phillips-head screwdriver (not included). Do not use the plastic purple screwdriver on these screws.



USE THE LITTLEBITS INVENT APP
Discover inventions, connect with the littleBits community, and easily upload and share your own creations.



TOUCH BOTH ALLIGATOR CLIPS AT THE SAME TIME
Touching the metal on both loose ends of the alligator clips uses the conductivity of your body to complete your Makey Makey® Bit circuit.



USE SCISSORS
When you see this icon, use scissors to cut your craft materials.



CHANGE MODE
Some Bits have a switch that changes how the Bit works. This icon will tell you which mode your switch should be in.



TWIST
Sometimes you need to twist components of Bits. The direction of the arrow will tell you which way to turn.



TURN DIAL CLOCKWISE (CW):
Use the purple screwdriver to turn the dial on the Bit all the way clockwise.



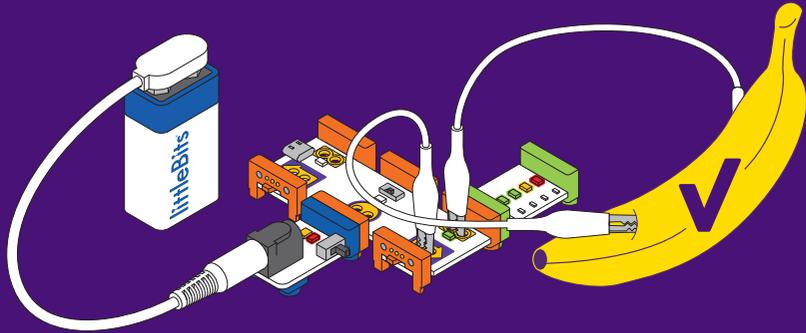
TURN DIAL COUNTER-CLOCKWISE (CCW):
Use the purple screwdriver to turn the dial on the Bit all the way counterclockwise.



ATTACH ALLIGATOR CABLE
Squeeze the back of the alligator clip and insert the tips into the holes separately.

CONDUCTORS VS. INSULATORS

WITH ALLIGATOR CLIPS, YOU CAN ADD CONDUCTIVE MATERIALS TO YOUR INVENTIONS POWERED BY THE MAKEY MAKEY® BIT™. SOME MATERIALS WORK BETTER THAN OTHERS.



CONDUCTORS, like fruit, are materials that easily let an electric current flow through them.



INSULATORS, like socks, are materials that don't let an electric current flow through them. These won't work with your Makey Makey Bit.

GOOD CONDUCTORS

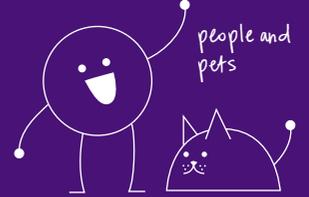
aluminum foil



graphite



people and pets



silverware

METALS make great conductors.



coins



most liquids



Most things that contain **WATER** are conductive (note: the Makey Makey Bit is not waterproof).



plants



metal pots and pans



keys



fruits and veggies

MINI-CHALLENGE: What's the longest circuit you can make with your Makey Makey Bit and conductors? Can you go around the room? How about around the house?



INVENTION 01

CREEPY EYEBALLS

INVENT A CREEPIN' COMPANION that glows green whenever it hears a noise. Make a unique personality for your Creepy Eyeballs, then put your new pal in the pantry to creep out your dad, or under the bed to prank your pet!

20
MIN
(MINIMUM)

TIME



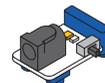
LEVEL



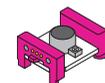
BITS™ + MATERIALS



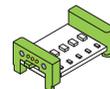
a1 battery & cable



p1 power



i20 sound trigger



o9 bargraph



a4 screwdriver



a7 adhesive shoes (x2)



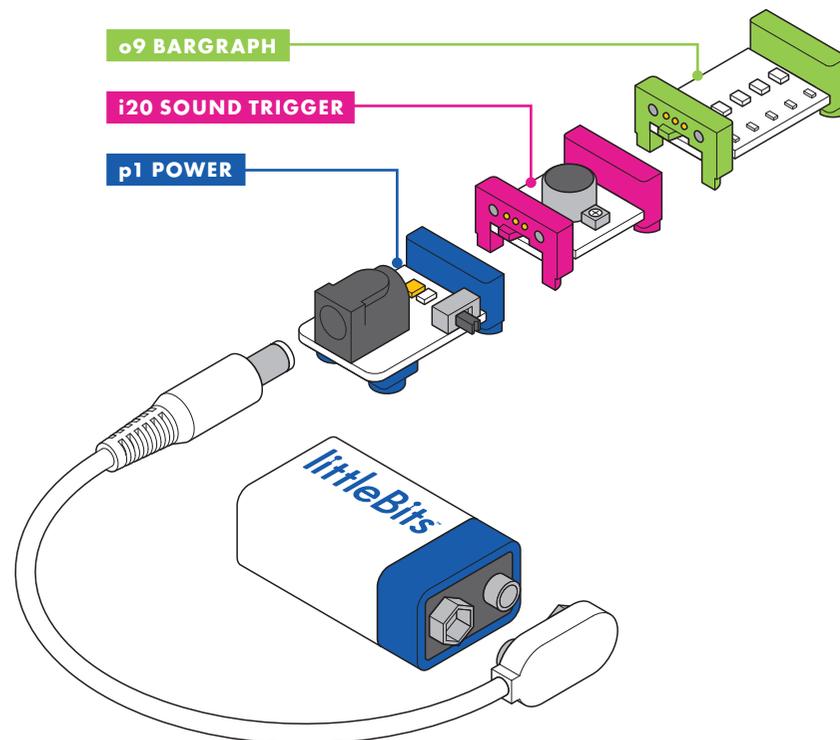
template A

- paper
- markers
- scissors
- masking tape

(not included)

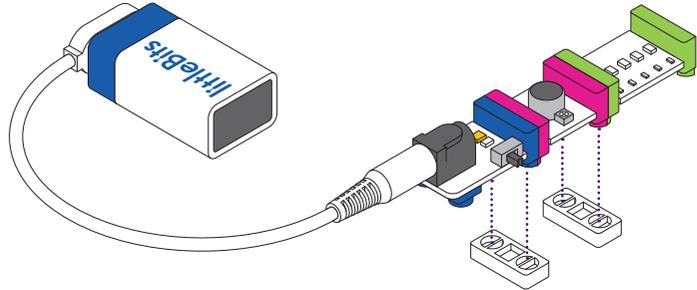
CREATE

BUILD YOUR CIRCUIT.



2

PRESS ADHESIVE SHOES ONTO YOUR CIRCUIT.

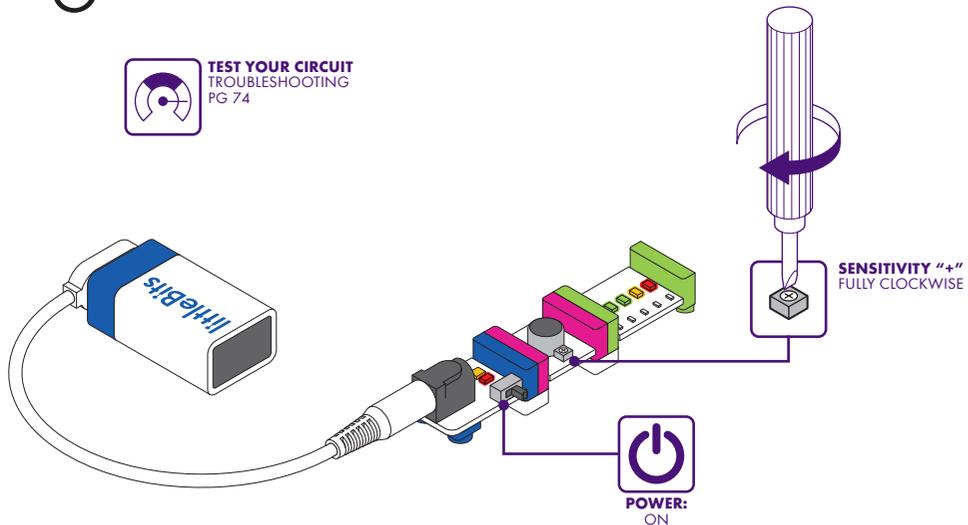


3

ADJUST AND TEST THE SOUND TRIGGER. When you clap, the bargraph should light up for three seconds.

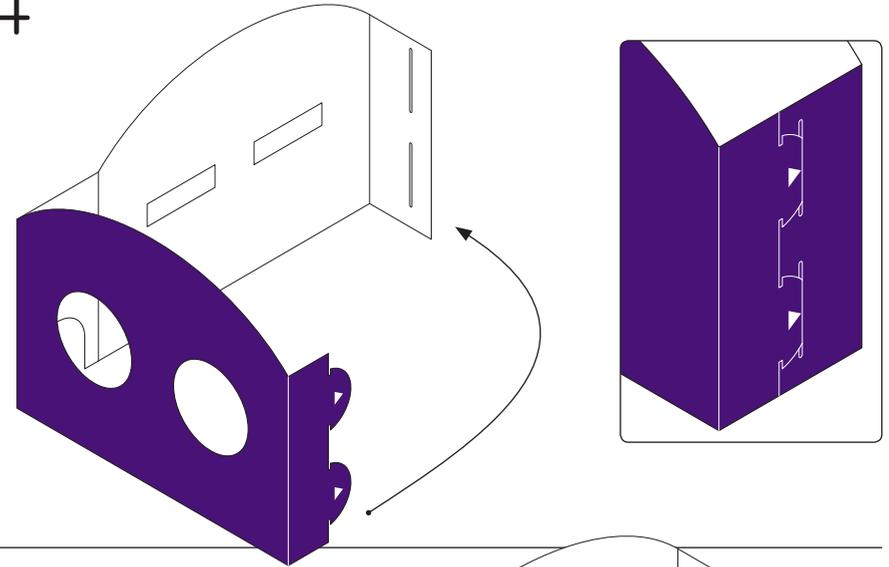


TEST YOUR CIRCUIT
TROUBLESHOOTING
PG 74



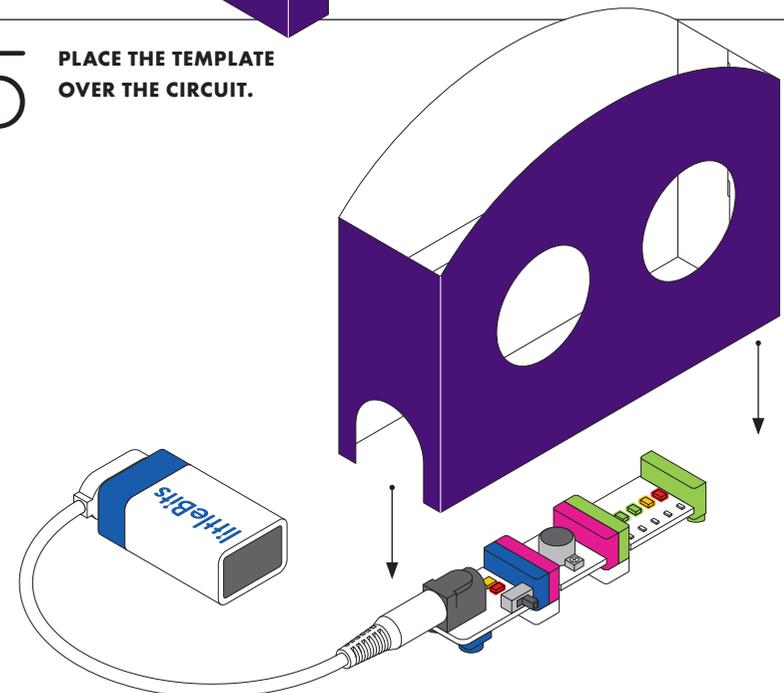
4

ASSEMBLE TEMPLATE A.



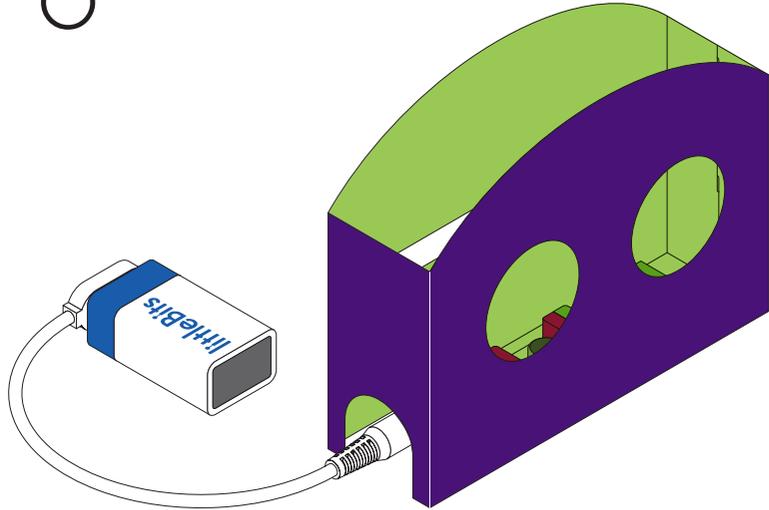
5

PLACE THE TEMPLATE OVER THE CIRCUIT.



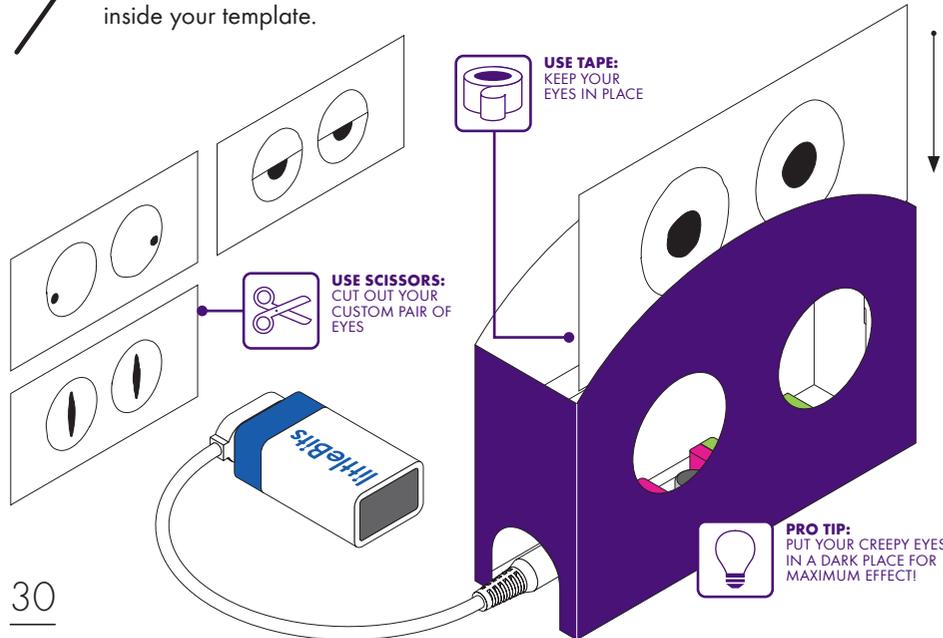
6

GET YOUR SOUND-ACTIVATED CREEPY EYEBALLS TO LIGHT UP! Just make a sound.



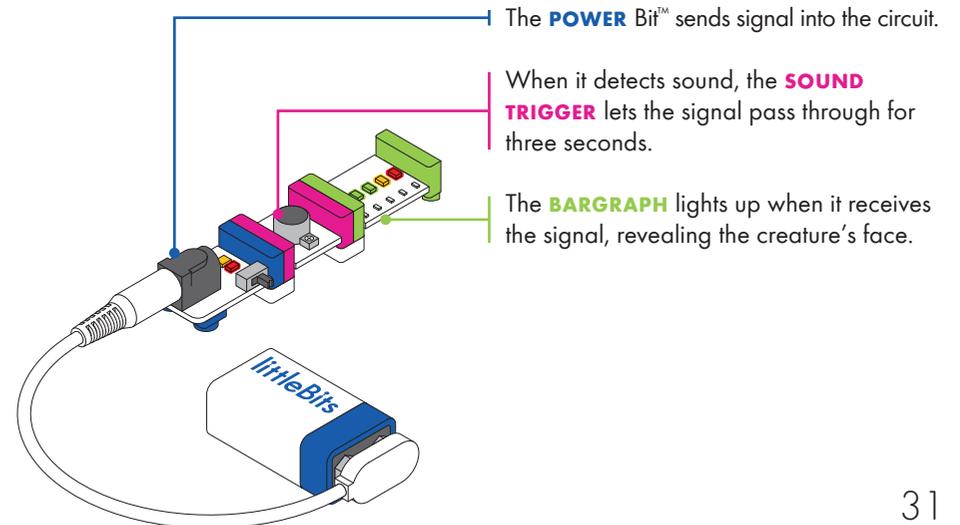
7

CUSTOMIZE! Draw some crazy eyeballs on a piece of paper and place it inside your template.



FREAK OUT YOUR FAMILY AND FRIENDS! Put your Creepy Eyeballs in dark corners of the house. Is it scarier when it's reflected in the mirror?

HOW IT WORKS



REMIX

TRY SOME OF THESE IDEAS TO CUSTOMIZE YOUR INVENTION. THEN COME UP WITH YOUR OWN!

A BRING YOUR CREEPY EYES TO NEW PLACES. Try hanging it on your door to greet visitors, or make a whole new sign!

B MAKE IT MOVE. Add a servo to animate your spooky prank!



C HACK DIFFERENT OBJECTS. Surprise someone by adding your circuit to other objects around your room.

SHARE

SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

SHOW US HOW YOU'VE SURPRISED YOUR FAMILY, FRIENDS, OR PETS WITH THIS INVENTION. Take a picture or video and upload it to the littleBits Invent app!

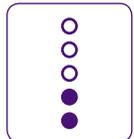
INVENTION 02

MOVING COLLAGE

INVENT INTERACTIVE ARTWORK that can wiggle and dance on your command. Bring the walls to life with unique moving masterpieces you create with imagery from magazines, a poster on the wall, or the art you made in school.

30
MIN
(MINIMUM)

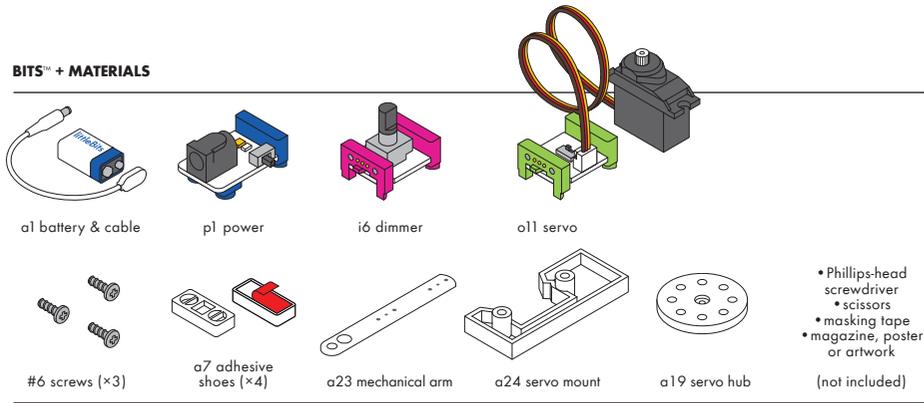
TIME



LEVEL

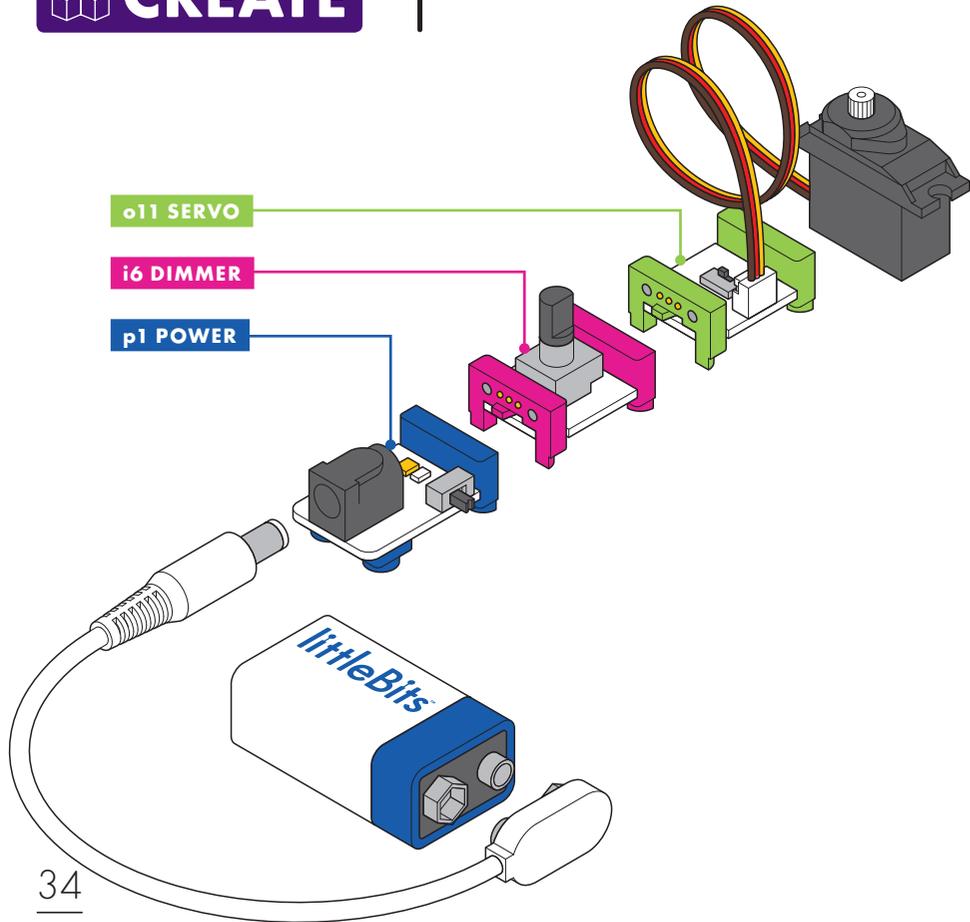


BITS™ + MATERIALS

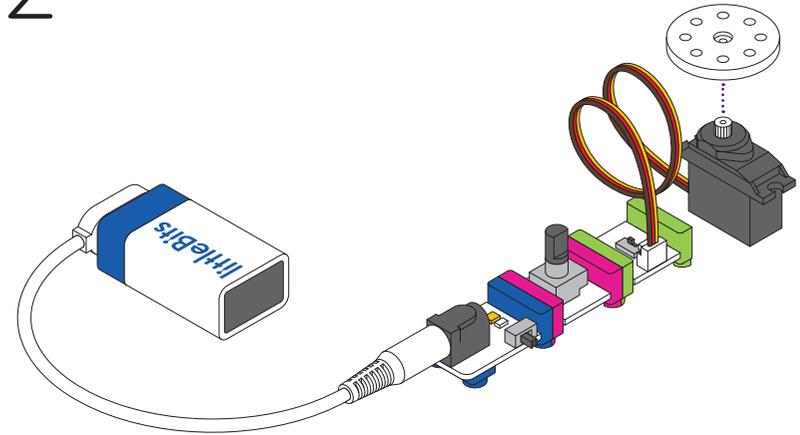


CREATE

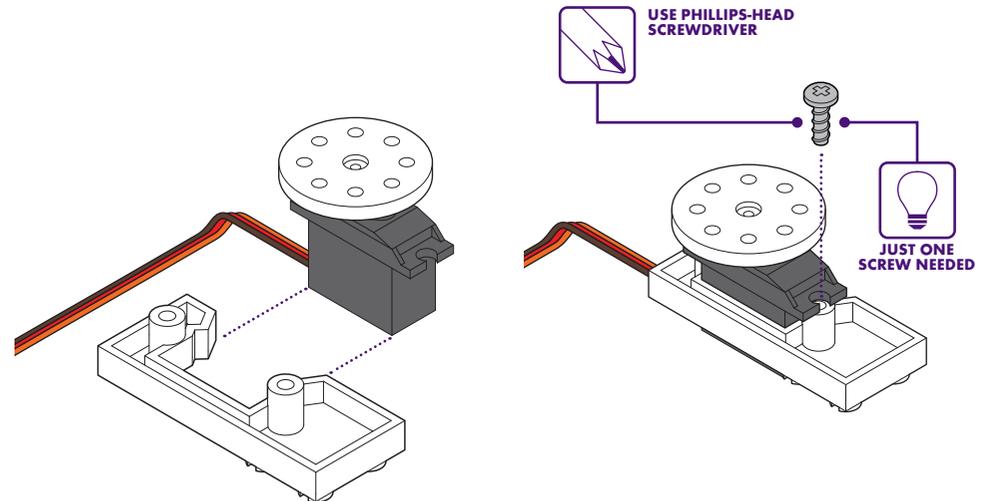
1 BUILD YOUR CIRCUIT.



2 PRESS THE SERVO HUB ONTO THE SERVO.

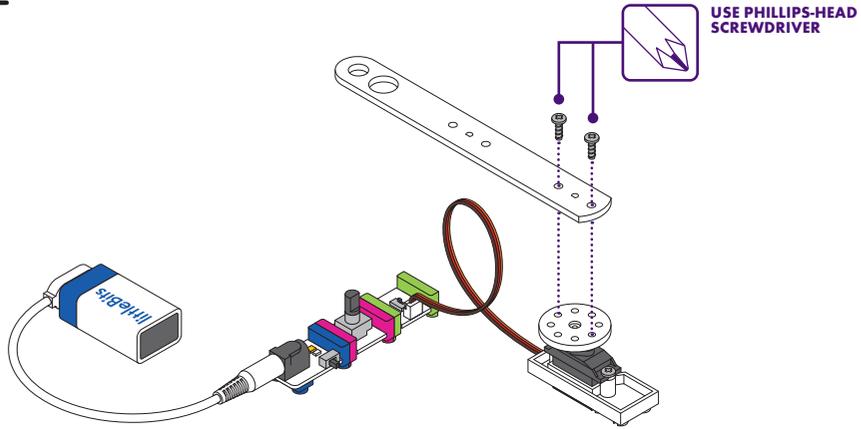


3 PRESS THE SERVO INTO THE SERVO MOUNT FROM THE SIDE AND SCREW IN.



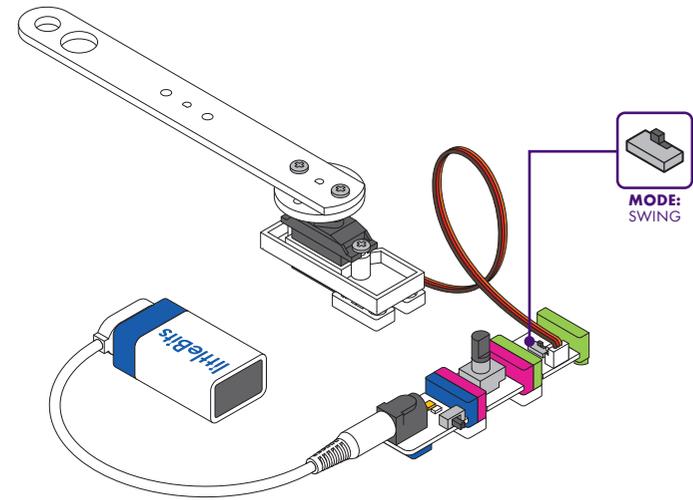
4

CONNECT THE MECHANICAL ARM TO THE SERVO HUB.



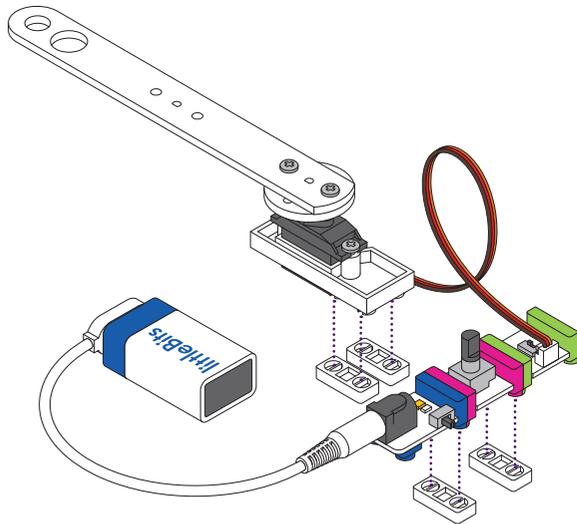
6

SET SERVO TO SWING MODE.



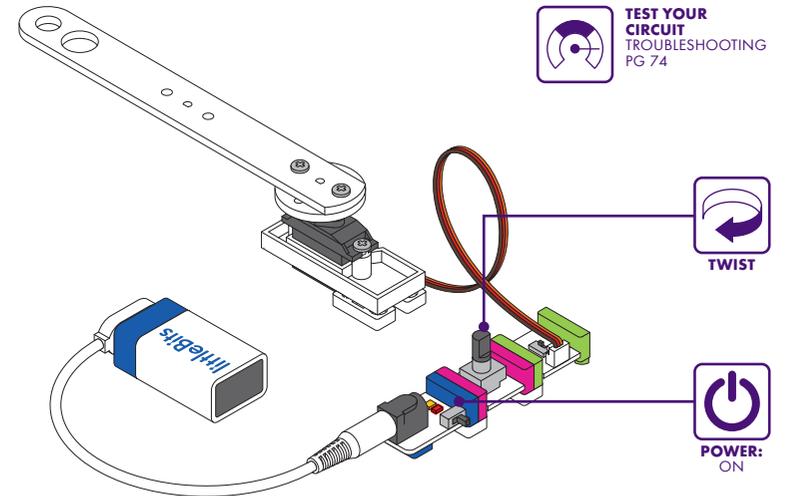
5

PRESS ADHESIVE SHOES ONTO YOUR CIRCUIT.



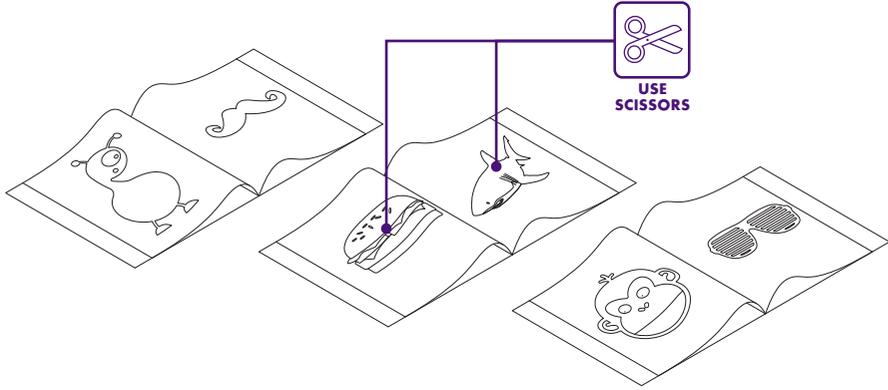
7

TEST YOUR CIRCUIT. Turn the power on and twist the dimmer knob. The servo arm should swing back and forth.



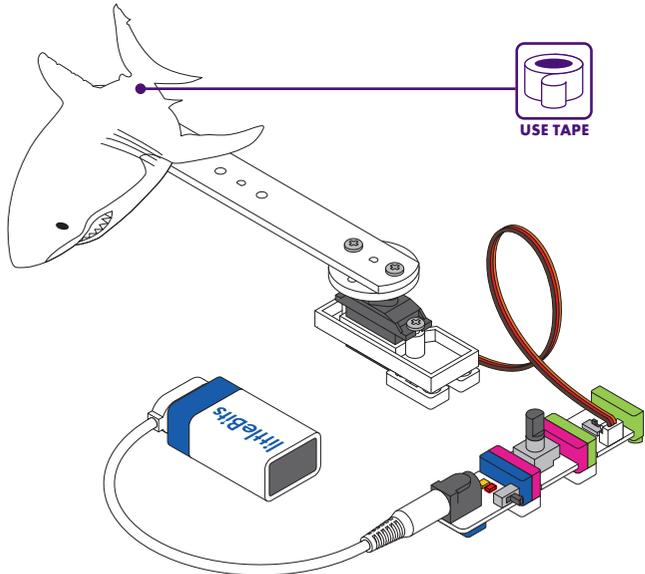
8

MAKE THE STORY OF YOUR MOVING COLLAGE. You will need two images. Cut out a background image and a moving image.



9

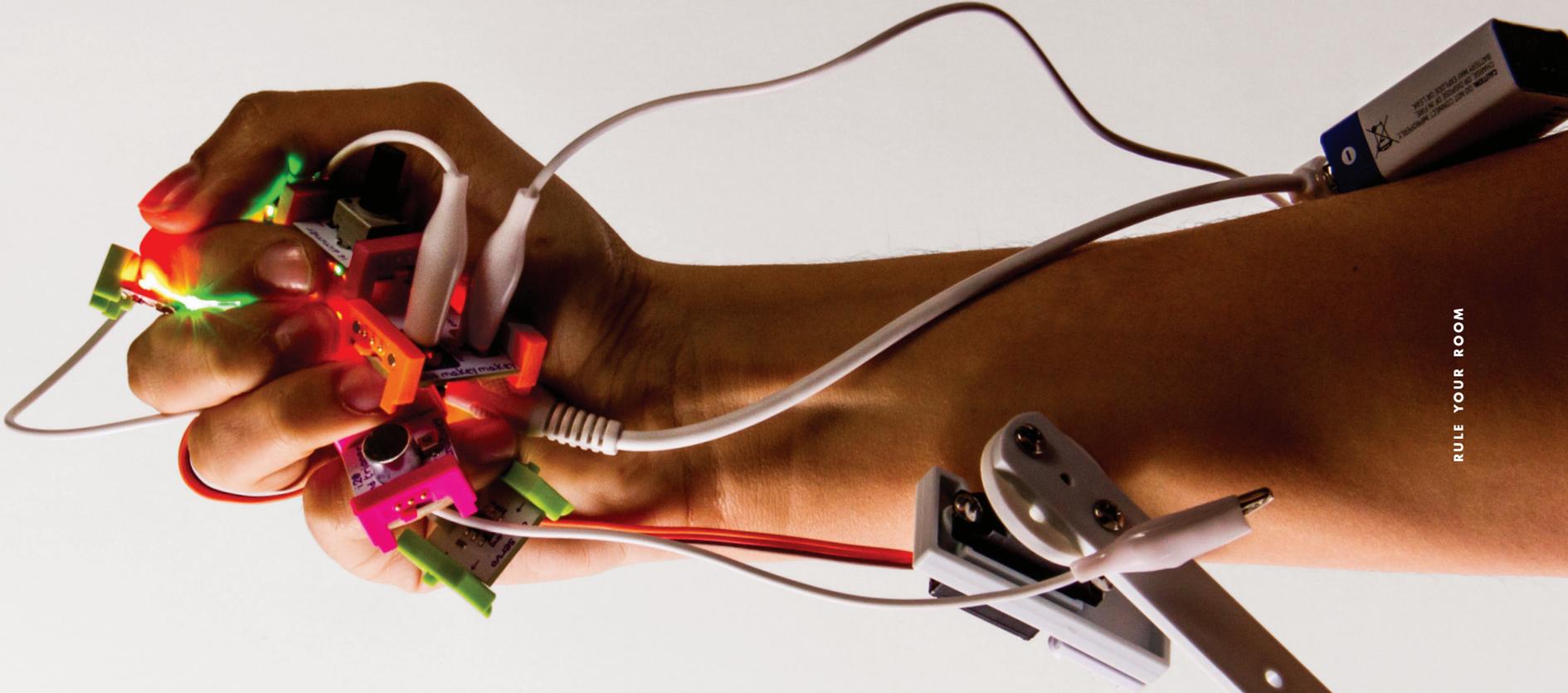
ATTACH THE MOVING IMAGE TO THE MECHANICAL ARM.



▼ CAREFULLY REMOVE THIS POSTER ▼

WE INVENT
THE WORLD
WE WANT
TO LIVE IN

littleBits™

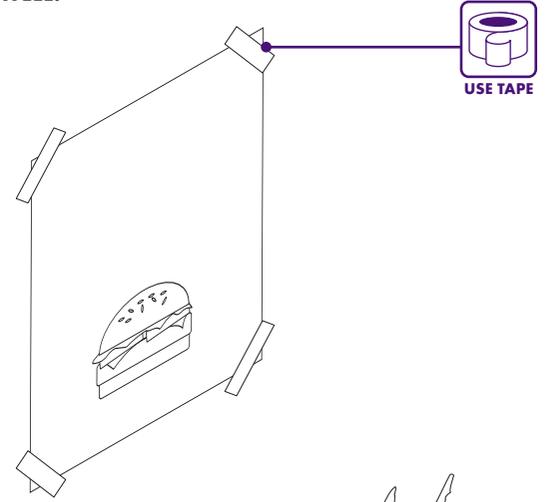


RULE YOUR ROOM

TO GET IT IN.

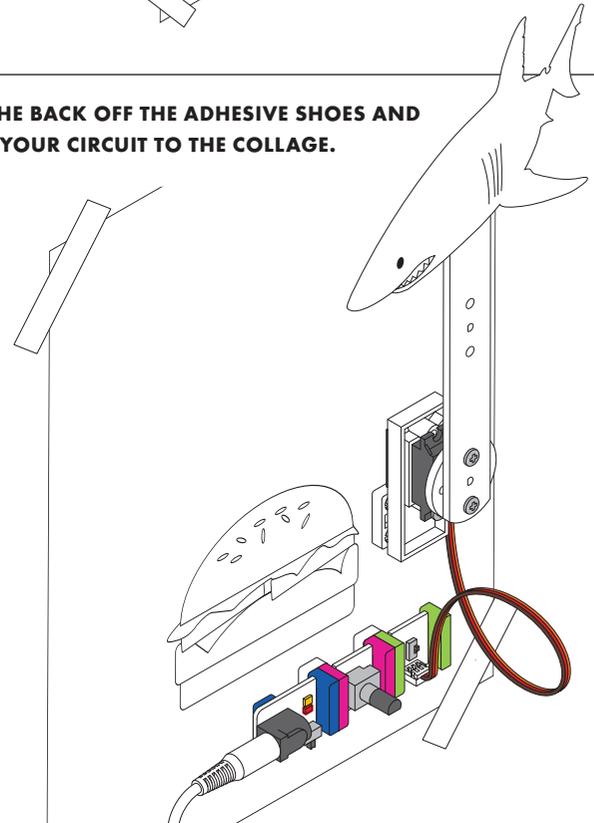
10

MOUNT YOUR BACKGROUND IMAGE TO THE WALL AND TAPE ALL FOUR CORNERS DOWN WELL.



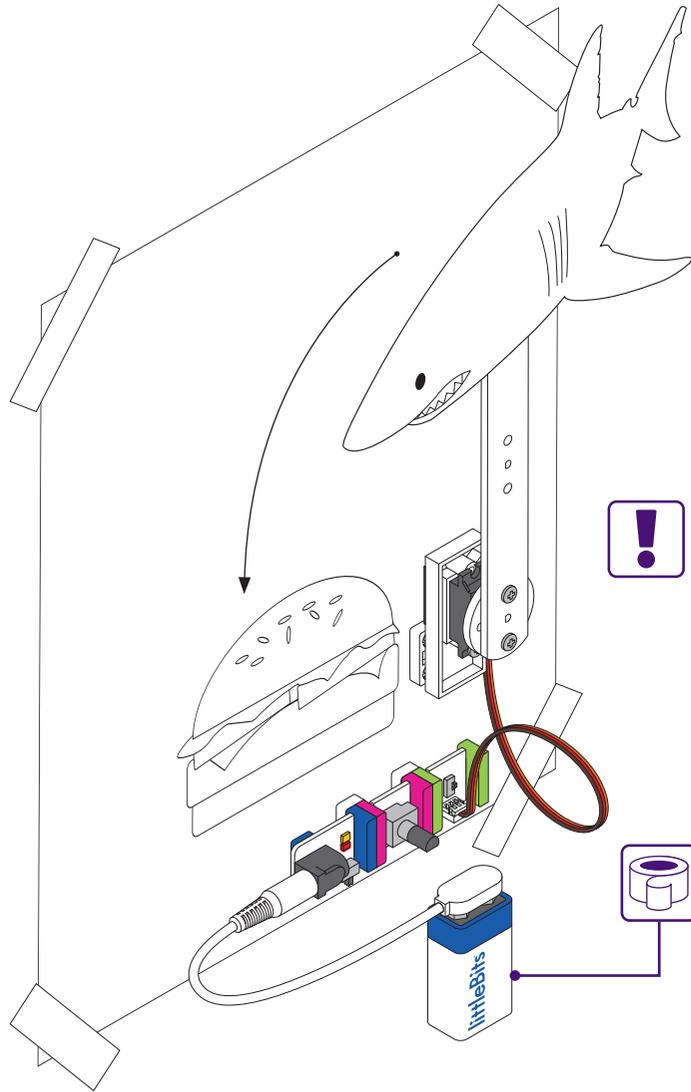
11

PEEL THE BACK OFF THE ADHESIVE SHOES AND STICK YOUR CIRCUIT TO THE COLLAGE.



12

SET IT IN MOTION! Twist the dimmer to make the animated element move faster or slower across the background.



ADJUST THE POSITION OF THE MECHANICAL ARM SO THAT IT SWINGS WHERE YOU WANT IT TO.
TROUBLESHOOTING PG 75



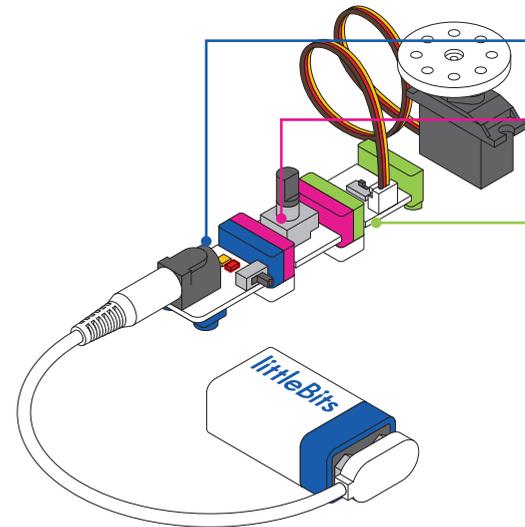
USE TAPE:
SECURE YOUR BATTERY TO THE WALL

 **PLAY!**



HANG YOUR MOVING COLLAGE UP IN YOUR ROOM and let people turn the dimmer and interact with your artwork. What are their reactions?

HOW IT WORKS



The **POWER Bit™** sends signal into the circuit.

The **DIMMER** controls how much signal moves through to the servo.

The speed of the **SERVO** depends on the amount of signal it receives from the dimmer. The more signal it receives, the faster it swings.

REMIX

TRY SOME OF THESE IDEAS TO CUSTOMIZE YOUR INVENTION. THEN COME UP WITH YOUR OWN!

A MAKE IT 3D. Turn your artwork into a game. Throw paper planes through a moving hoop. Test your precision skills by speeding up the target.

B ADD LIGHTING EFFECTS. Try it out in the dark! What happens if you add a bargraph to your circuit?

C MAKE IT INTERACTIVE. Can you make your artwork respond to sound? Try swapping the sound trigger in for the dimmer to make your circuit sound-reactive.



SHARE

SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

TAKE VIDEOS OF EACH MOVING COLLAGE YOU MAKE TO CREATE AN ONLINE GALLERY! Post to the littleBits Invent app and share it with friends and family.

INVENTION 03

BUZZING BOOKLET

20
MIN
(MINIMUM)

TIME

○
○
○
●

LEVEL

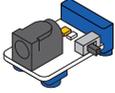
INVENT A BUZZER USING THIS BOOKLET and the Makey Makey Bit. Now you can transform almost anything into an electronic device! Create even crazier contraptions by adding random materials like bananas to the mix and use them to make up games.



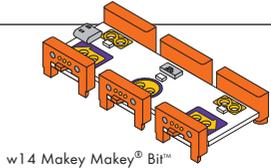
BITS™ + MATERIALS



a1 battery & cable



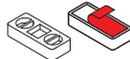
p1 power



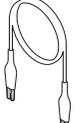
w14 Makey Makey® Bit™



o6 buzzer



a7 adhesive shoes (x2)



alligator clips (x2)

• pencil
(not included)

CREATE

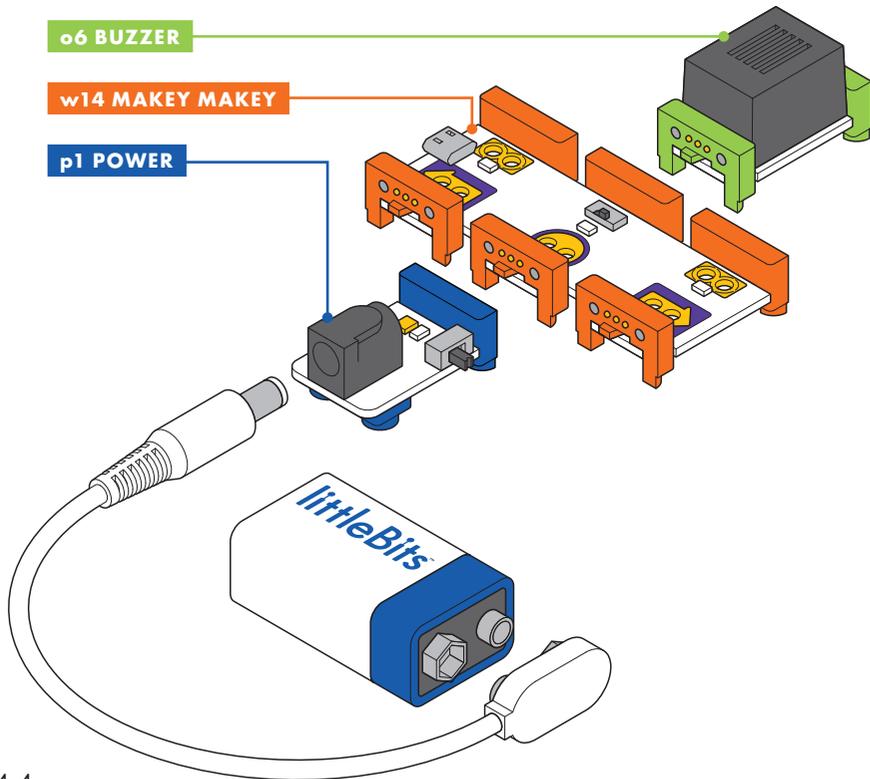
1

BUILD YOUR CIRCUIT.

o6 BUZZER

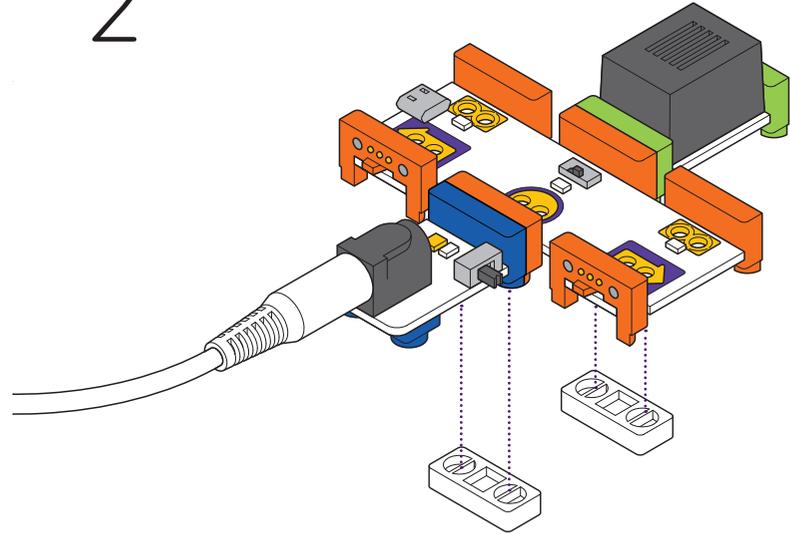
w14 MAKEY MAKEY

p1 POWER



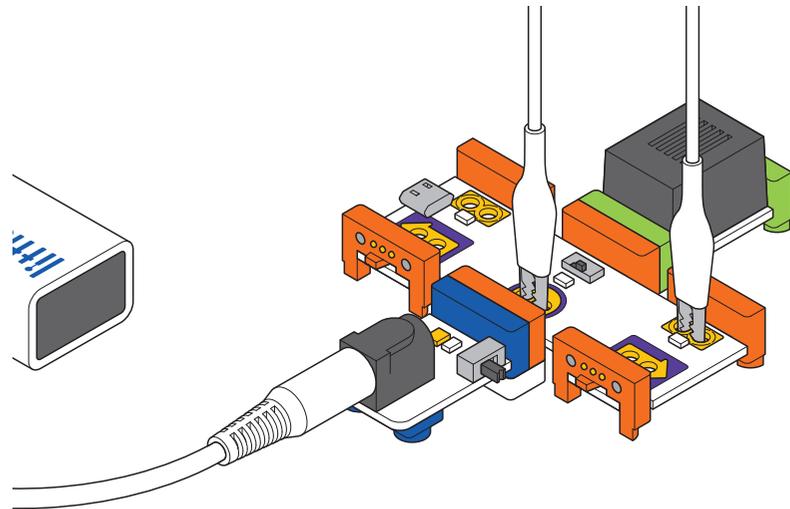
2

PRESS ADHESIVE SHOES ONTO YOUR CIRCUIT TO KEEP YOUR BITS SECURE.

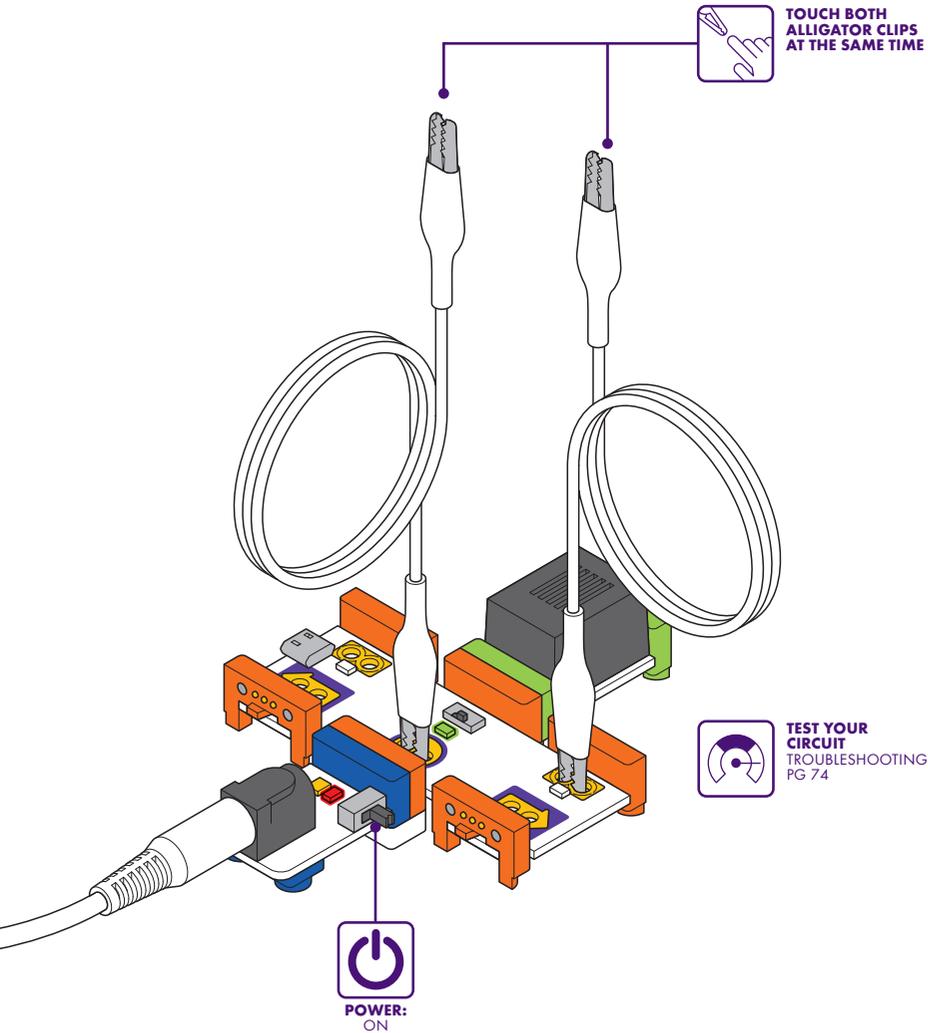


3

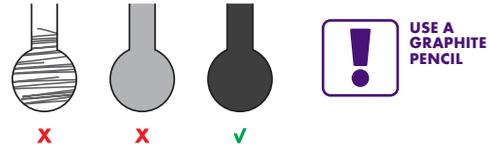
ATTACH TWO ALLIGATOR CLIPS TO THE MAKEY MAKEY BIT – ONE TO THE SPACE/CLICK PAD, ANOTHER TO THE EARTH PAD.



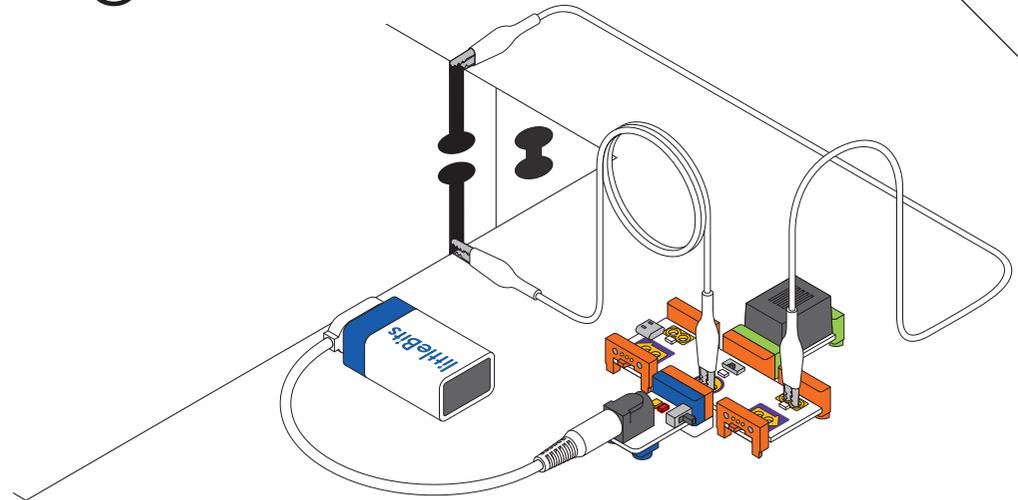
4 **TURN THE POWER ON AND TEST YOUR CIRCUIT.** Your body is conductive, so touching both clips lets electricity flow through the Makey Makey Bit, sending an **ON** signal to the buzzer Bit.



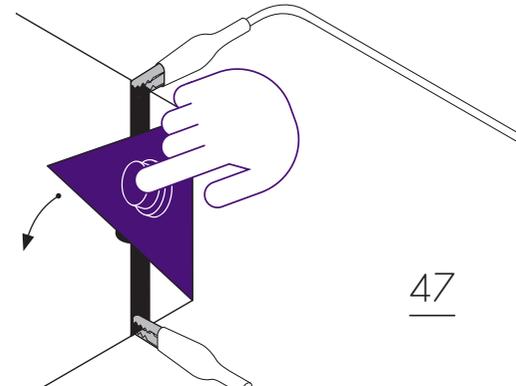
5 **USE A PENCIL TO FILL IN THE THREE SHAPES AS DARK AS YOU CAN.**



6 **ATTACH ALLIGATOR CLIPS TO THE PENCILLED EDGES OF THIS PAGE.**



7 **FOLD THE CORNER OF THIS PAGE AND FIRMLY PRESS THE BUTTON ON THE FOLDED FLAP.** The buzzer should sound.

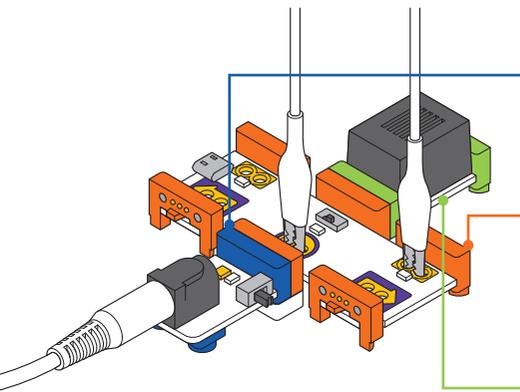




 **PLAY!**

IT'S ALIVE!
Your booklet is now an electronic device. Challenge your friends to a trivia game, and see who can answer the fastest.

HOW IT WORKS



The **POWER** Bit provides electricity to the circuit.

The **MAKEY MAKEY** Bit sends an **ON** signal when the **SPACE/CLICK** pad and the **EARTH** pad are connected. When you fold the page, the pencilled-in shapes touch, allowing electricity to flow through the circuit.

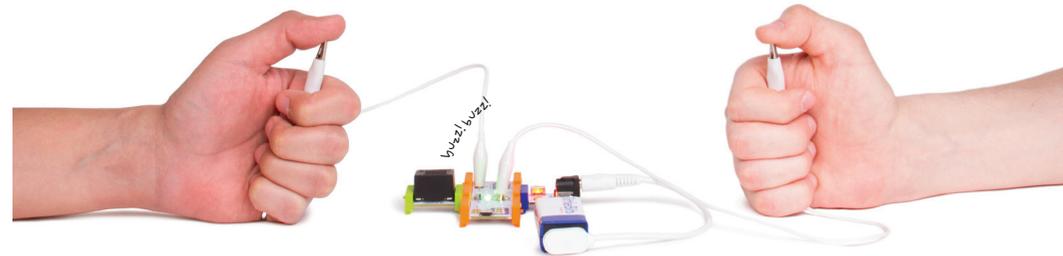
The **BUZZER** sounds when it gets a signal from the Makey Makey Bit.

REMIX

TRY SOME OF THESE IDEAS TO CUSTOMIZE YOUR INVENTION. THEN COME UP WITH YOUR OWN!

A **ACTIVATE YOUR BUZZER WITH A FIST BUMP!** Have one person hold the **EARTH** clip, while the other holds the **SPACE/CLICK** clip. Pound it to set off the buzzer!

B **BRING OTHER OBJECTS TO LIFE.** Instead of clipping into this booklet, try clipping each alligator clip onto other conductive objects like metal utensils and foods. Touch both objects to activate the buzzer.



C **USE OTHER CONDUCTIVE OBJECTS TO CONNECT PENCILLED-IN SHAPES AND TRIGGER THE BITS.** Take metal objects like spoons or coins, or foods like bananas and lemons and make them touch both shapes at the same time.

SHARE

SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

WHICH OBJECTS AND MATERIALS MADE THE BEST BUZZING BOOKLET? Create a video and share your results on the littleBits Invent app!

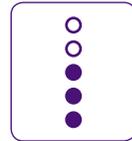
INVENTION 04

BURGLAR BUZZER

INVENT YOUR OWN BURGLAR ALARM that catches would-be thieves in the act! Protect your prized possessions with this automatic alerter that sounds and stays on when someone tries to take your stuff. No heists allowed when you're around.

30
MIN
(MINIMUM)

TIME



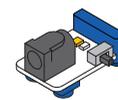
LEVEL



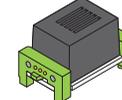
BITS™ + MATERIALS



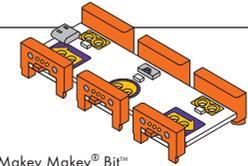
a1 battery & cable



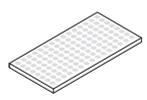
p1 power



o6 buzzer



w14 Makey Makey® Bit™



a26 mounting board



alligator clips (x2)



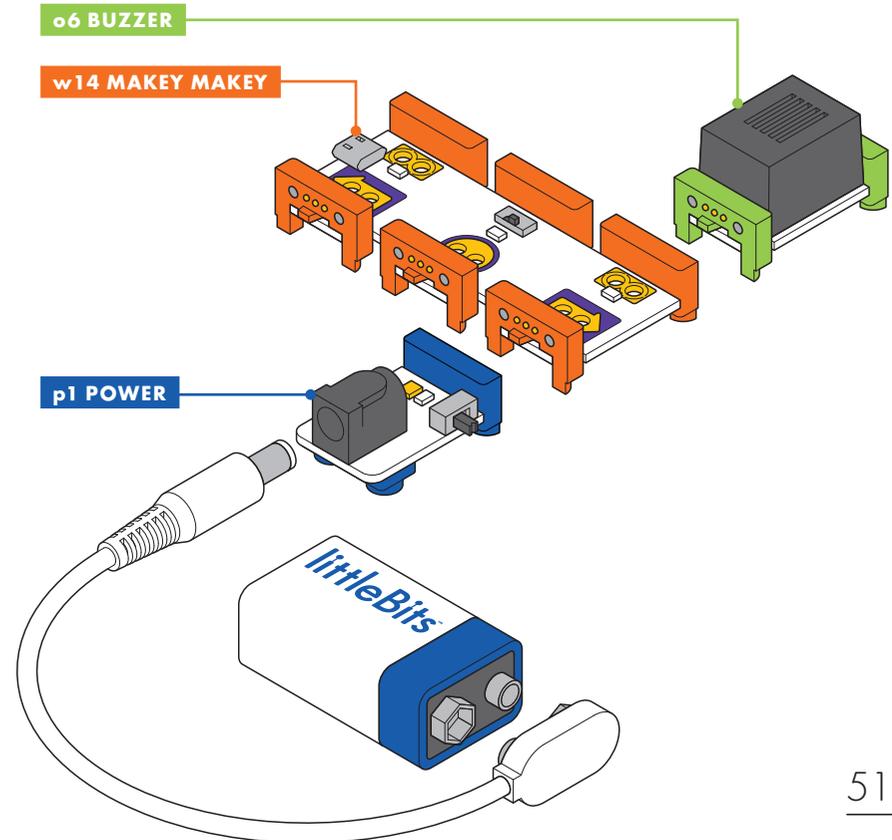
Rule Your Room
Kit box

- paper
 - scissors
 - masking tape
 - string
 - aluminum foil
- (not included)

CREATE

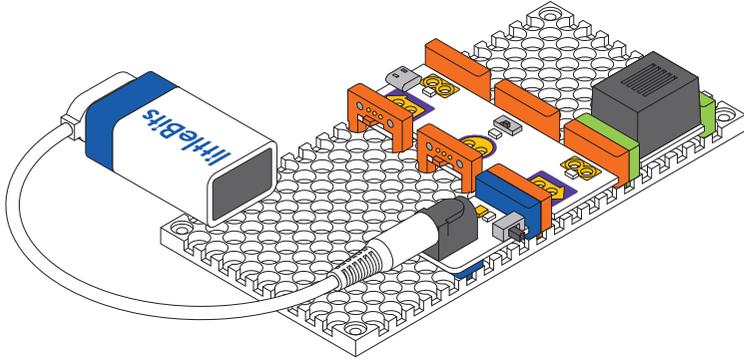


BUILD YOUR CIRCUIT.



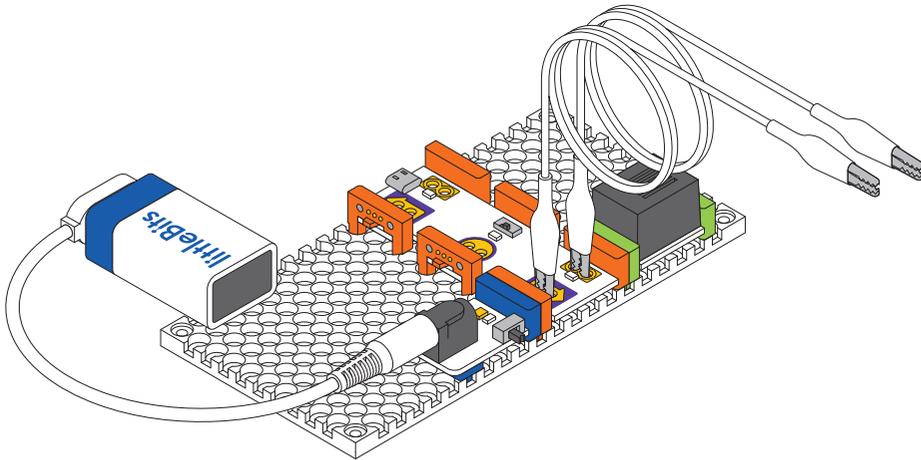
2

PRESS YOUR CIRCUIT ONTO THE MOUNTING BOARD.



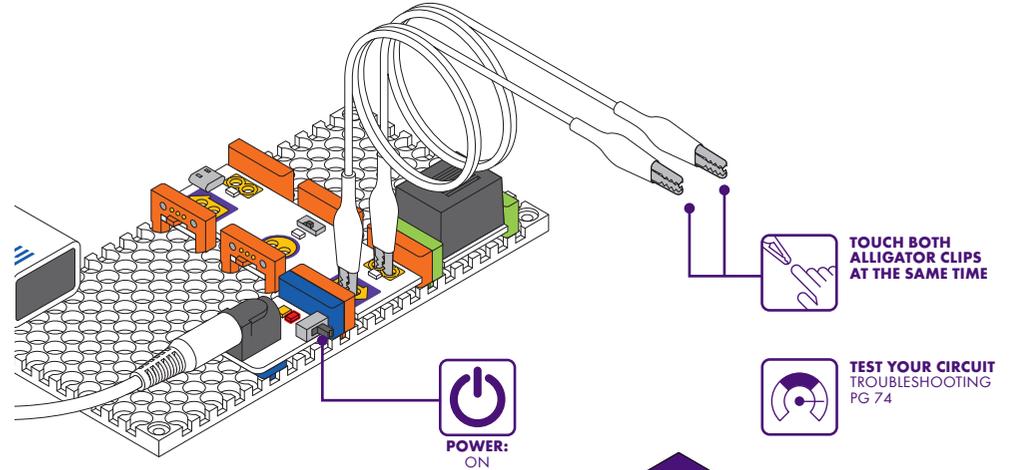
3

CLIP ONE ALLIGATOR CLIP TO THE LEFT ARROW PAD AND THE SECOND ALLIGATOR CLIP TO THE EARTH PAD.



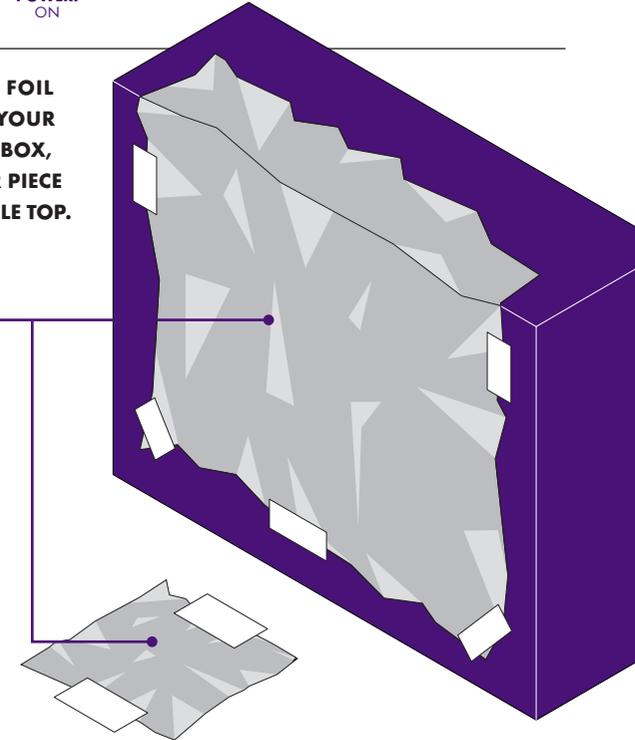
4

TURN THE POWER ON AND TEST YOUR CIRCUIT. Your body is conductive, so touching both clips lets electricity flow through the Makey Makey Bit, triggering an **ON** signal to the buzzer Bit.



5

TAPE A LARGE PIECE OF FOIL ONTO THE BOTTOM OF YOUR "RULE YOUR ROOM" KIT BOX, AND ANOTHER SMALLER PIECE OF FOIL ONTO YOUR TABLE TOP.

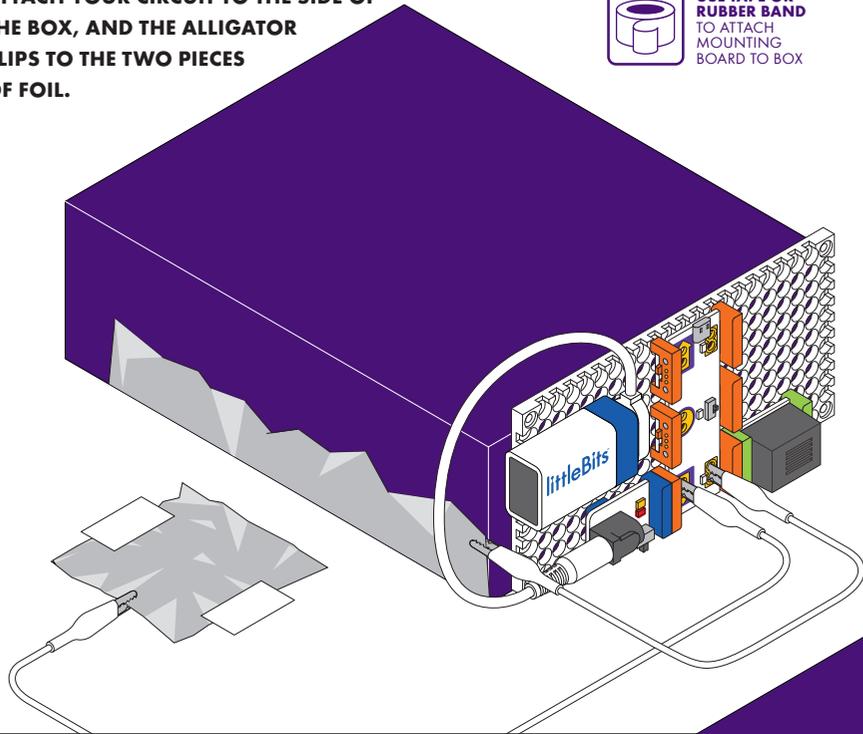


6

ATTACH YOUR CIRCUIT TO THE SIDE OF THE BOX, AND THE ALLIGATOR CLIPS TO THE TWO PIECES OF FOIL.

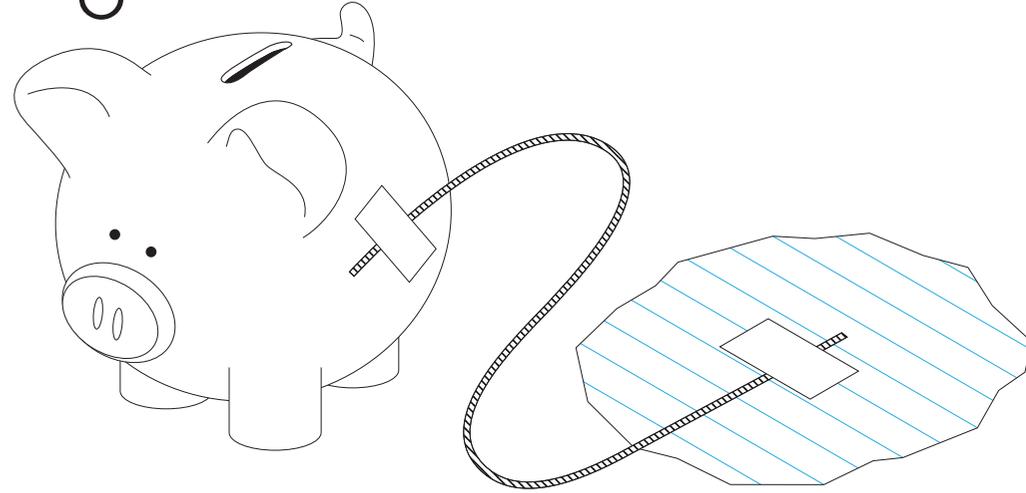


USE TAPE OR RUBBER BAND TO ATTACH MOUNTING BOARD TO BOX



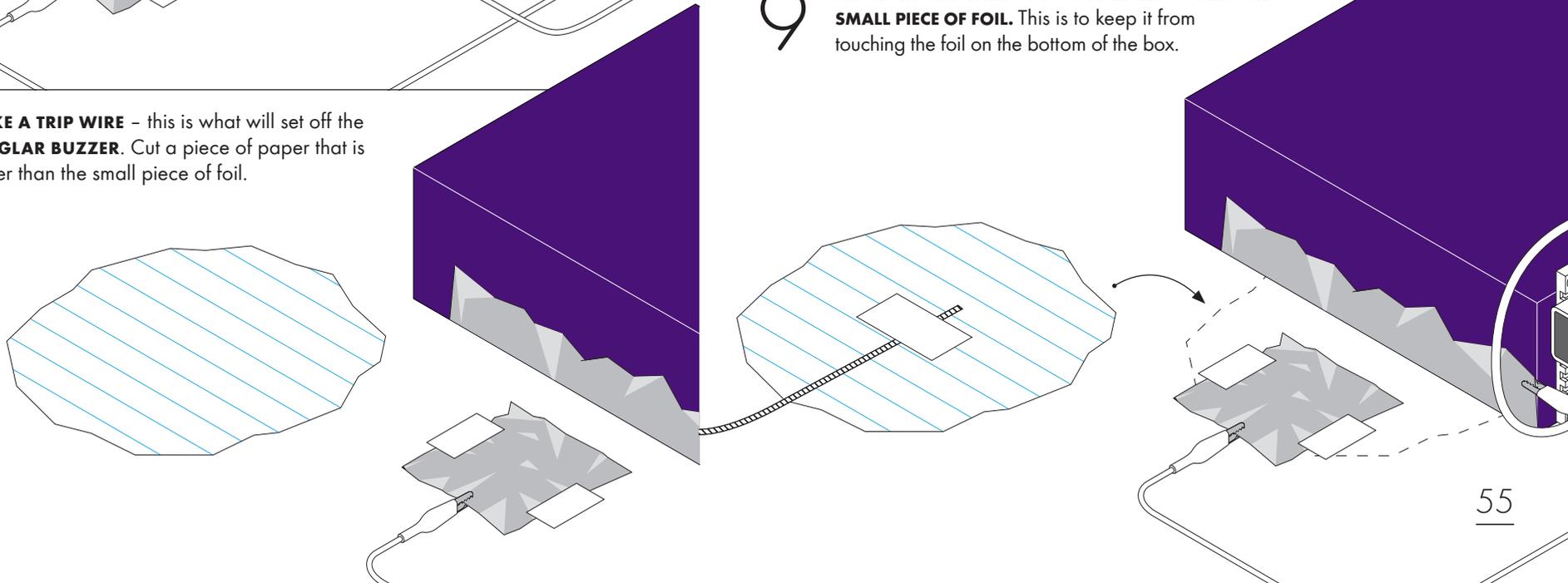
8

TAPE A PIECE OF STRING TO YOUR TRIP WIRE AND THE OBJECT YOU WANT TO PROTECT.



7

MAKE A TRIP WIRE – this is what will set off the **BURGLAR BUZZER**. Cut a piece of paper that is larger than the small piece of foil.



9

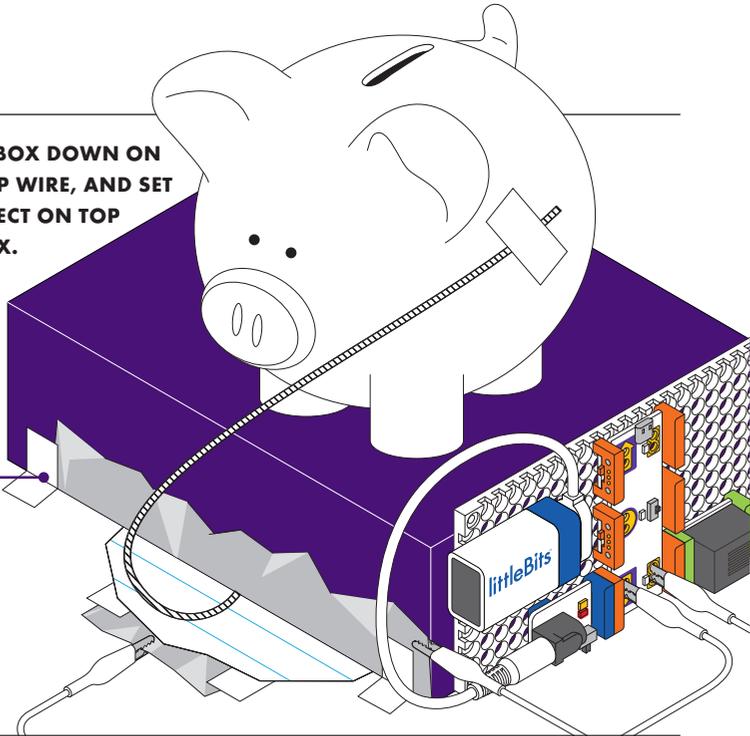
PLACE THE TRIP WIRE SO IT COMPLETELY COVERS THE SMALL PIECE OF FOIL. This is to keep it from touching the foil on the bottom of the box.

10

SET YOUR BOX DOWN ON TO THE TRIP WIRE, AND SET YOUR OBJECT ON TOP OF THE BOX.

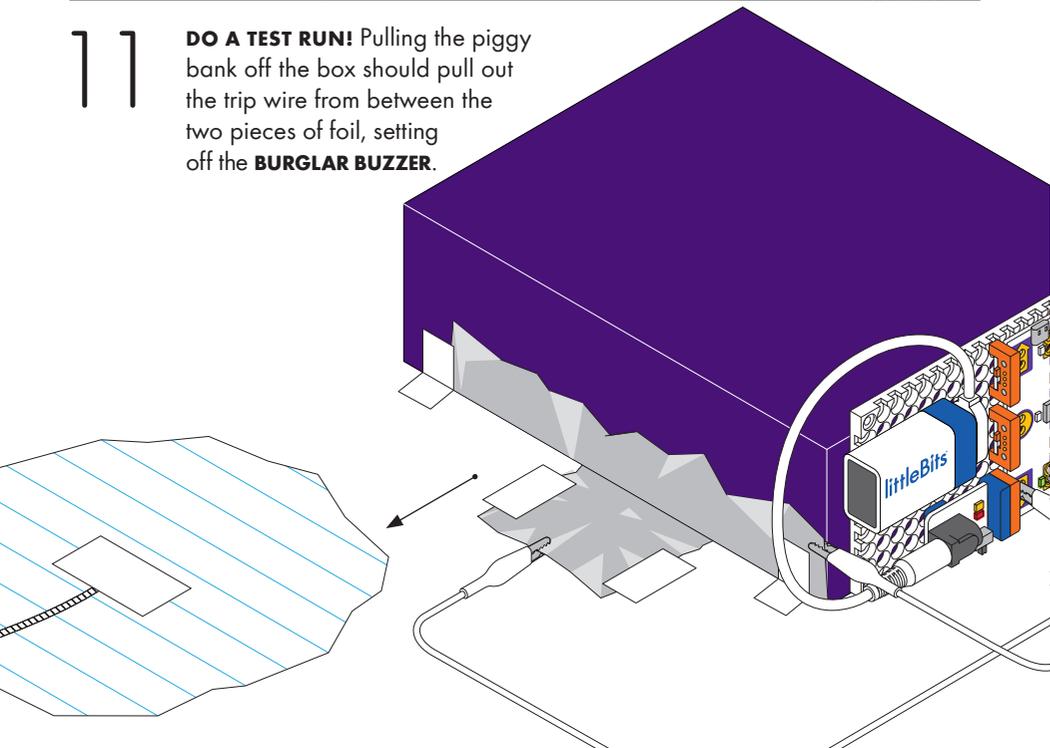


USE TAPE TO SECURE THE BOX TO YOUR TABLE TOP



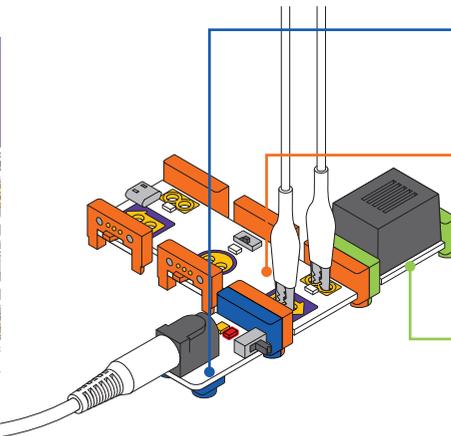
11

DO A TEST RUN! Pulling the piggy bank off the box should pull out the trip wire from between the two pieces of foil, setting off the **BURGLAR BUZZER**.



CHALLENGE A FRIEND TO NAB YOUR PIGGY BANK WITHOUT SETTING OFF THE ALARM.

HOW IT WORKS



The **POWER** Bit provides electricity to the circuit.

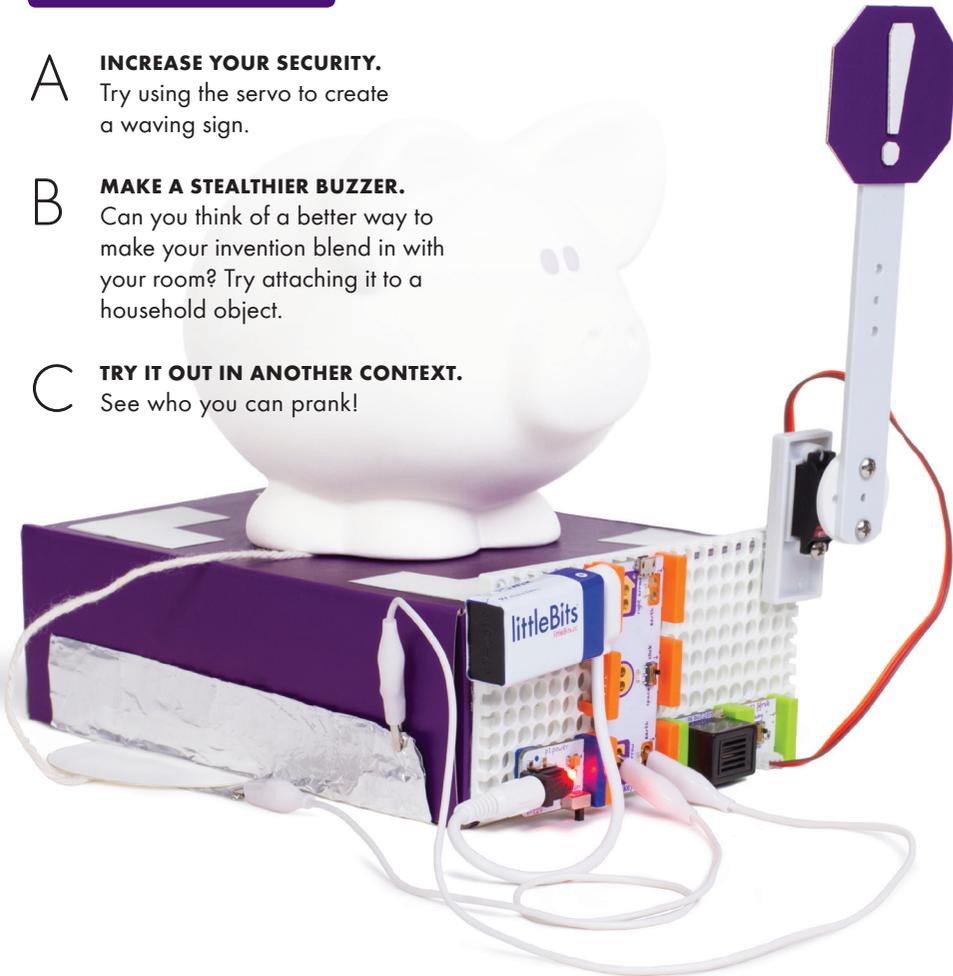
The **MAKE MAKEY** Bit sends an **ON** signal when the **LEFT ARROW** pad and **EARTH** pad are connected. This happens when the paper is pulled out, and the two pieces of foil touch, allowing electricity to flow through the circuit.

The **BUZZER** Bit sounds when it gets a signal from the Makey Makey Bit.

REMIX

TRY SOME OF THESE IDEAS TO CUSTOMIZE YOUR INVENTION. THEN COME UP WITH YOUR OWN!

- A INCREASE YOUR SECURITY.**
Try using the servo to create a waving sign.
- B MAKE A STEALTHIER BUZZER.**
Can you think of a better way to make your invention blend in with your room? Try attaching it to a household object.
- C TRY IT OUT IN ANOTHER CONTEXT.**
See who you can prank!



SHARE

TAKE A VIDEO OF YOUR CUSTOM BURGLAR BUZZER IN ACTION AND POST IT ON THE LITTLEBITS INVENT APP.

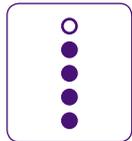
SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

INVENTION 05

DOMAIN DEFENDER

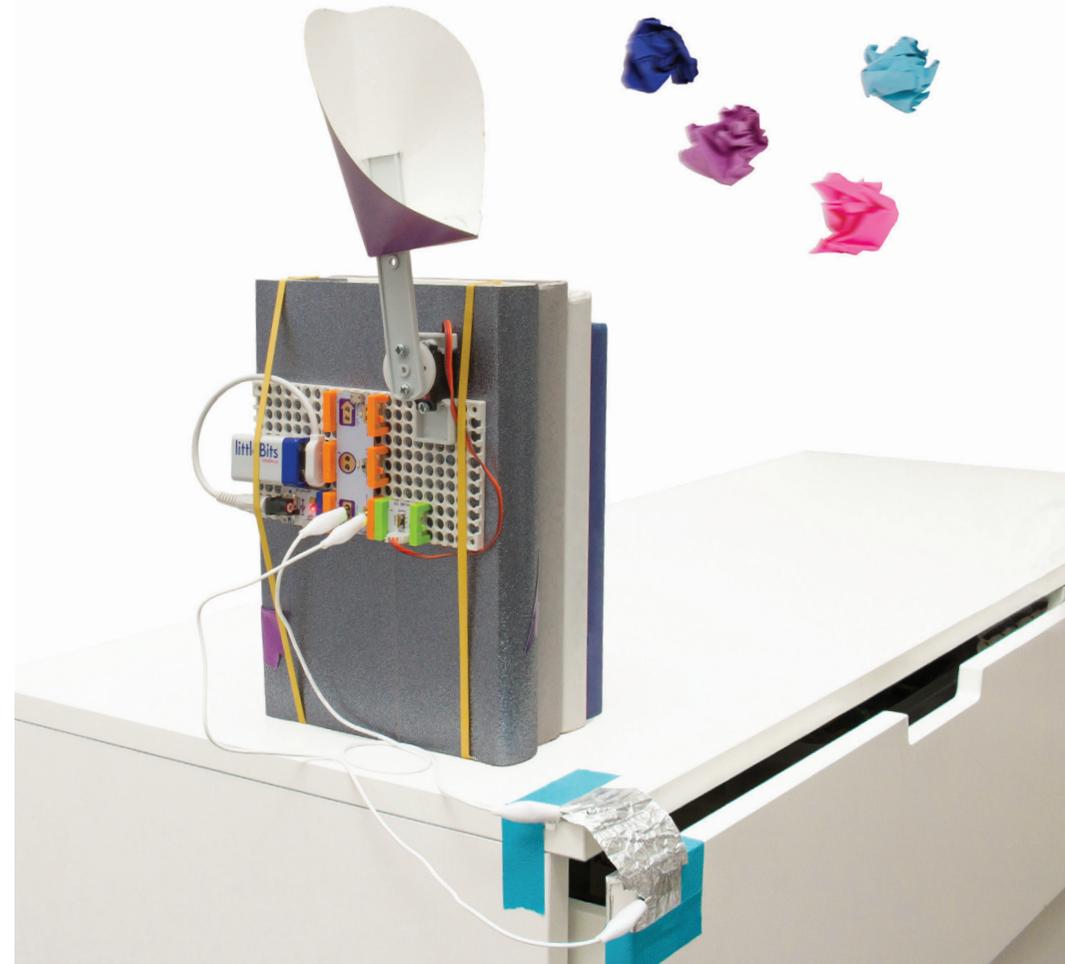
40
MIN
(MINIMUM)

TIME

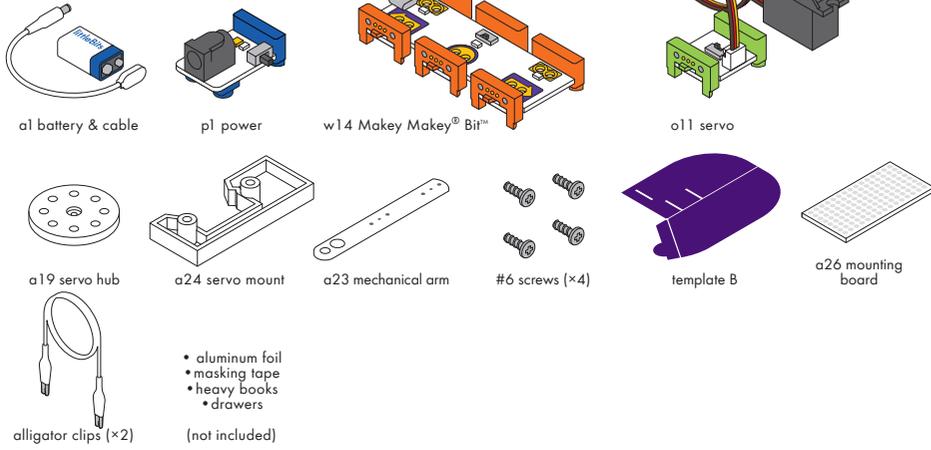


LEVEL

INVENT YOUR OWN DEFENSE SYSTEM to guard your stuff. Warning: Keep out! Connect the Domain Defender to your drawers, and this loyal launcher will fling projectiles when someone tries to break in. Tweak it to amp up the accuracy, power, or camouflage ability.

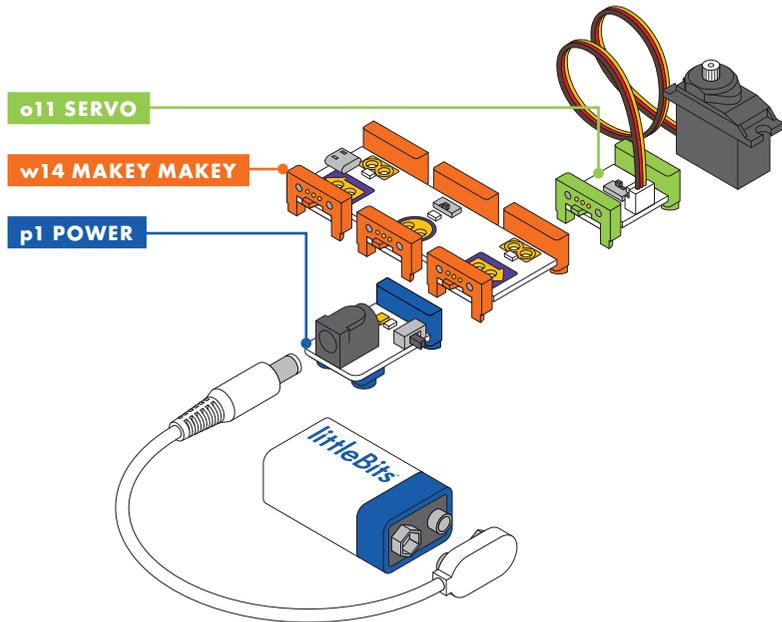


BITS™ + MATERIALS

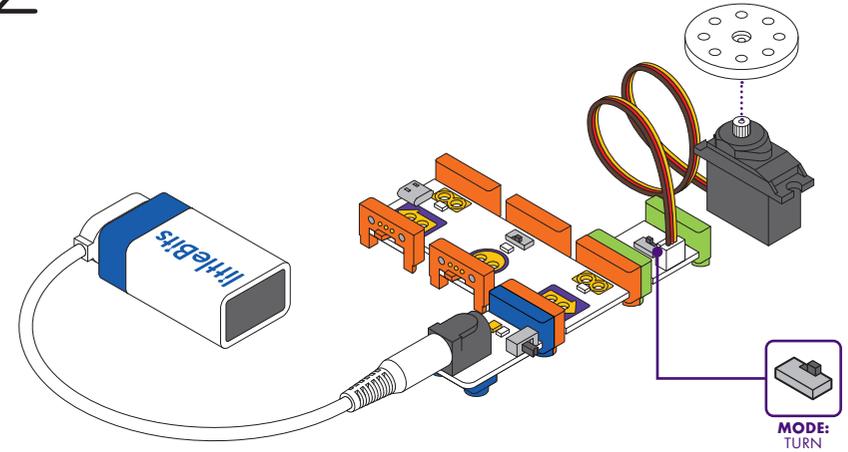


CREATE

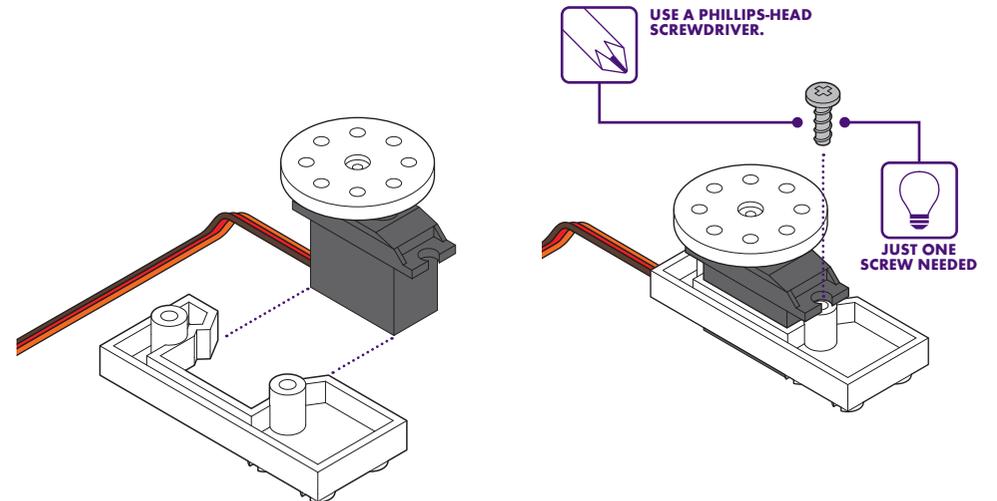
1 BUILD YOUR CIRCUIT.



2 PRESS THE SERVO HUB ONTO THE SERVO AND ADJUST THE SERVO TO TURN MODE.

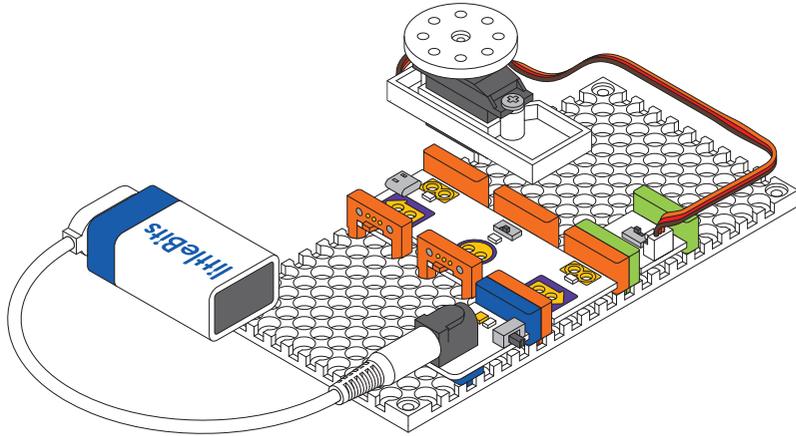


3 PRESS SERVO INTO THE SERVO MOUNT FROM THE SIDE AND SCREW IN.



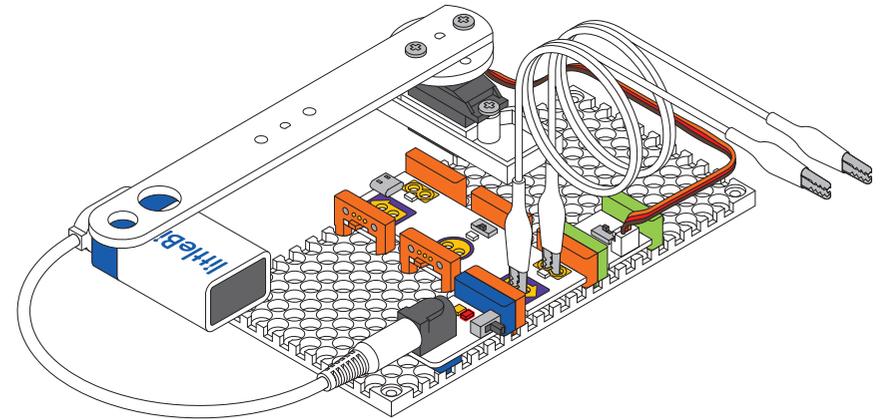
4

PRESS YOUR CIRCUIT AND SERVO MOUNT ONTO THE MOUNTING BOARD.



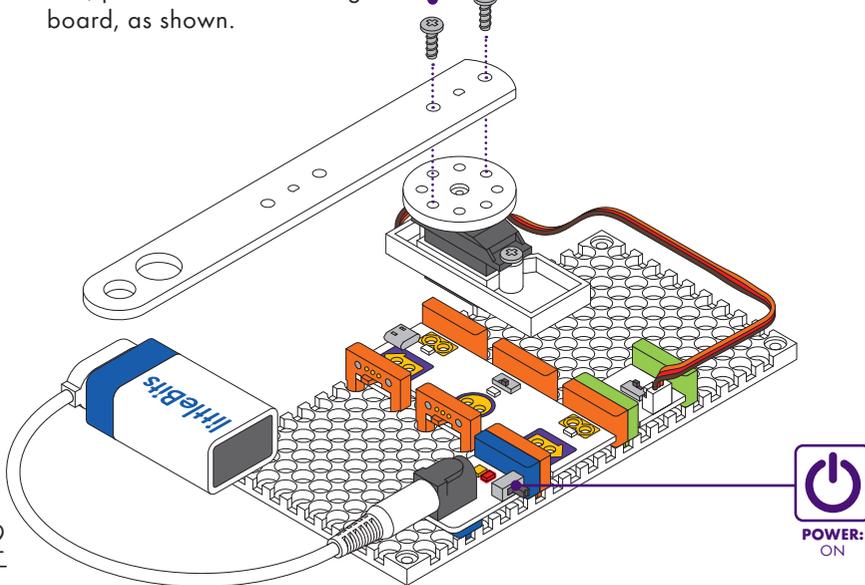
6

ON THE MAKEY MAKEY BIT, CLIP ONE OF THE ALLIGATOR CLIPS TO THE LEFT ARROW PAD AND THE OTHER TO THE EARTH PAD.



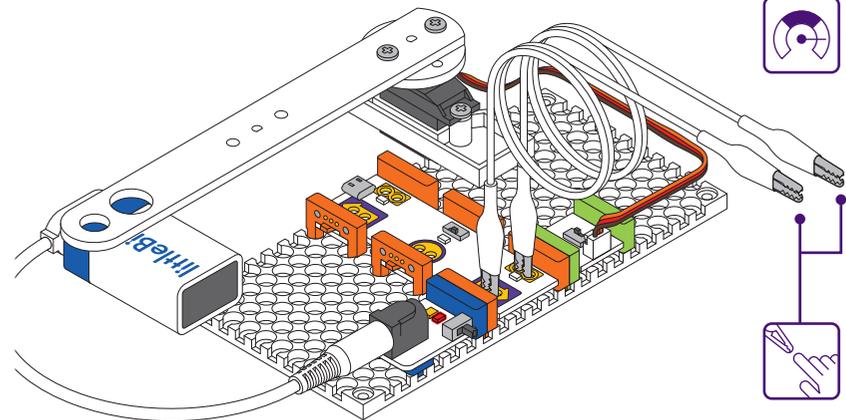
5

WITH POWER ON, connect the mechanical arm to the servo hub, parallel to the mounting board, as shown.



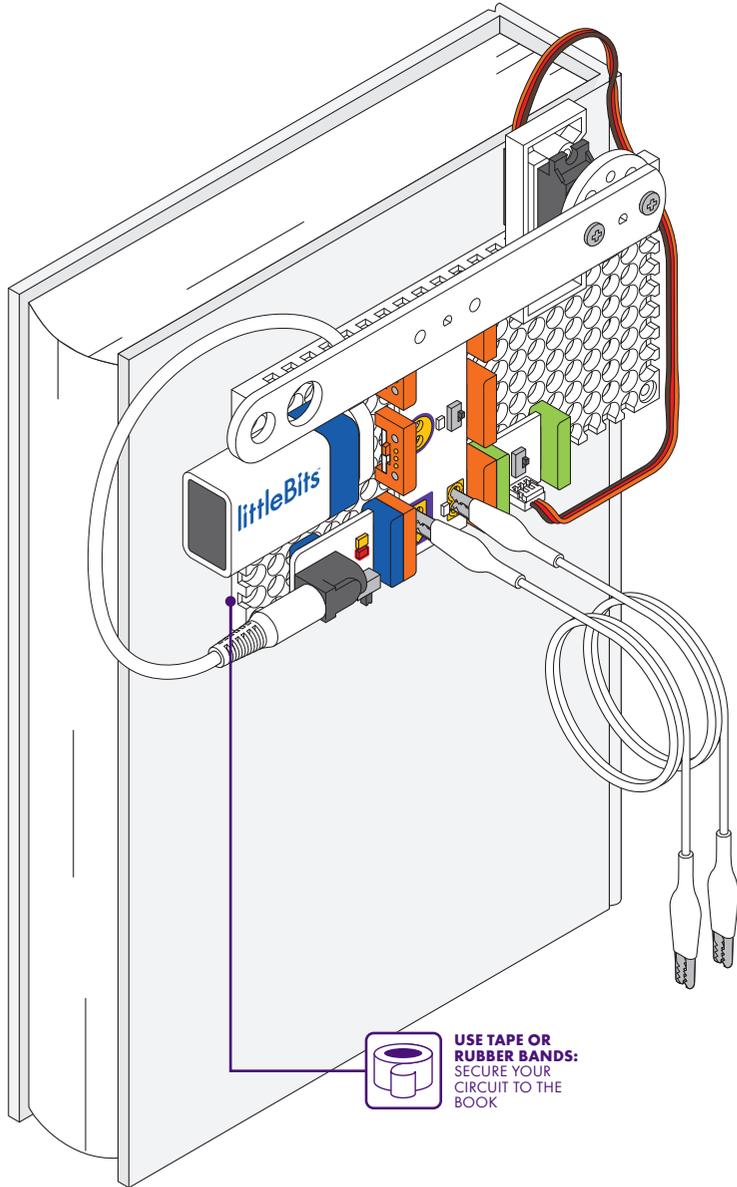
7

TEST YOUR CIRCUIT! Touching the ends of both alligator clips should cause the servo to swing to the right.



8

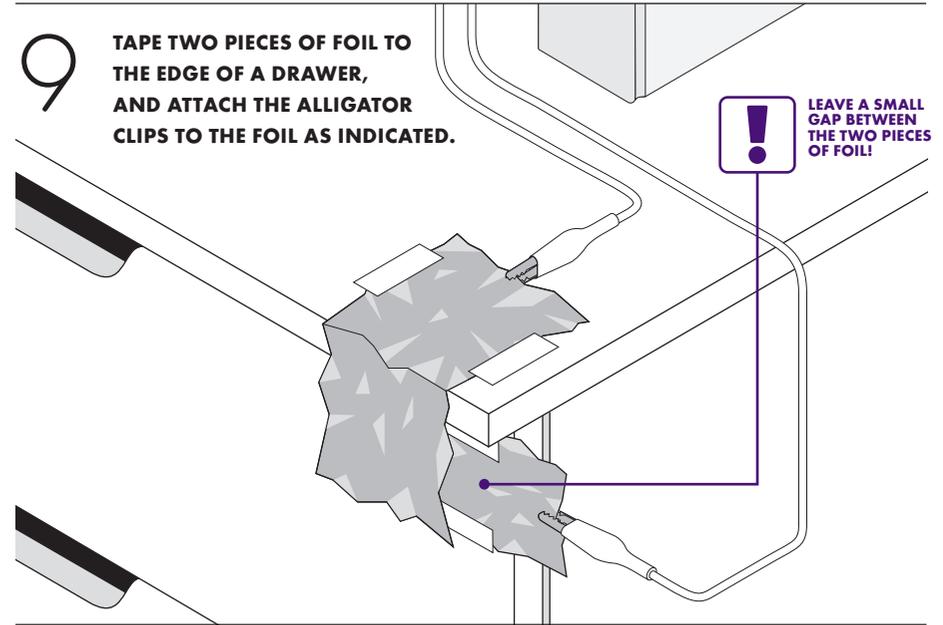
ATTACH YOUR CIRCUIT TO A BOOK.



USE TAPE OR RUBBER BANDS:
SECURE YOUR
CIRCUIT TO THE
BOOK

9

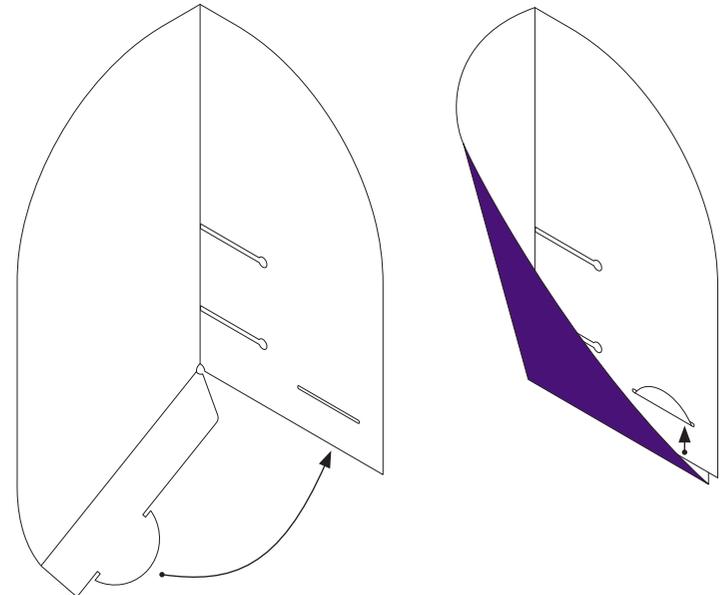
TAPE TWO PIECES OF FOIL TO THE EDGE OF A DRAWER, AND ATTACH THE ALLIGATOR CLIPS TO THE FOIL AS INDICATED.



!
LEAVE A SMALL
GAP BETWEEN
THE TWO PIECES
OF FOIL!

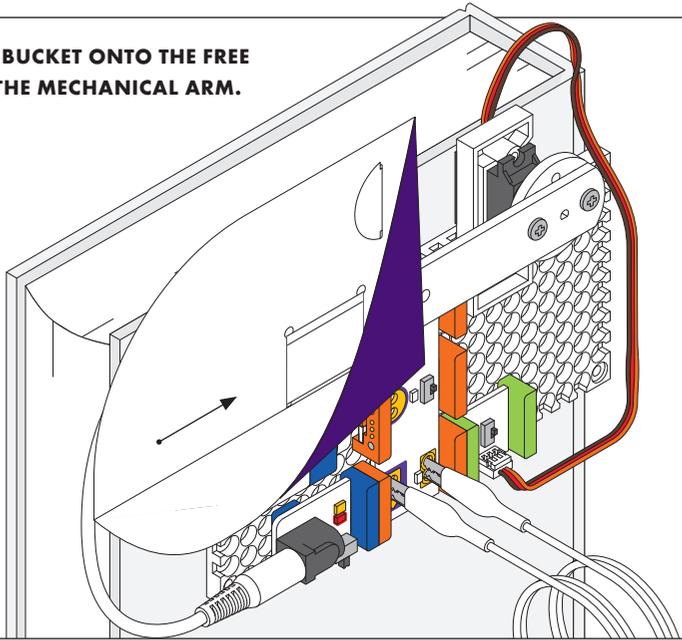
10

MAKE THE BUCKET FOR THE LAUNCHER USING TEMPLATE B.



11

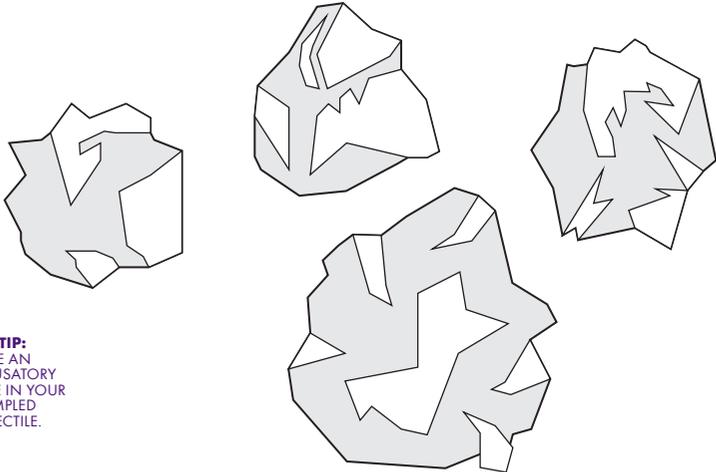
SLIP THE BUCKET ONTO THE FREE END OF THE MECHANICAL ARM.



PRO TIP:
IF NEEDED, YOU CAN USE TAPE TO SECURE THE TEMPLATE.

12

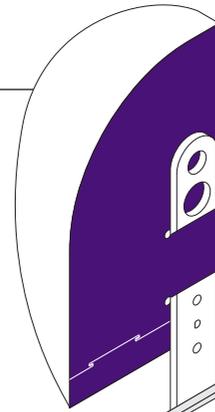
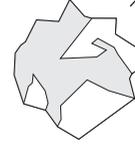
CRUMPLE UP A HALF-SHEET OF NOTEBOOK PAPER OR A SMALL PIECE OF FOIL TO LAUNCH.



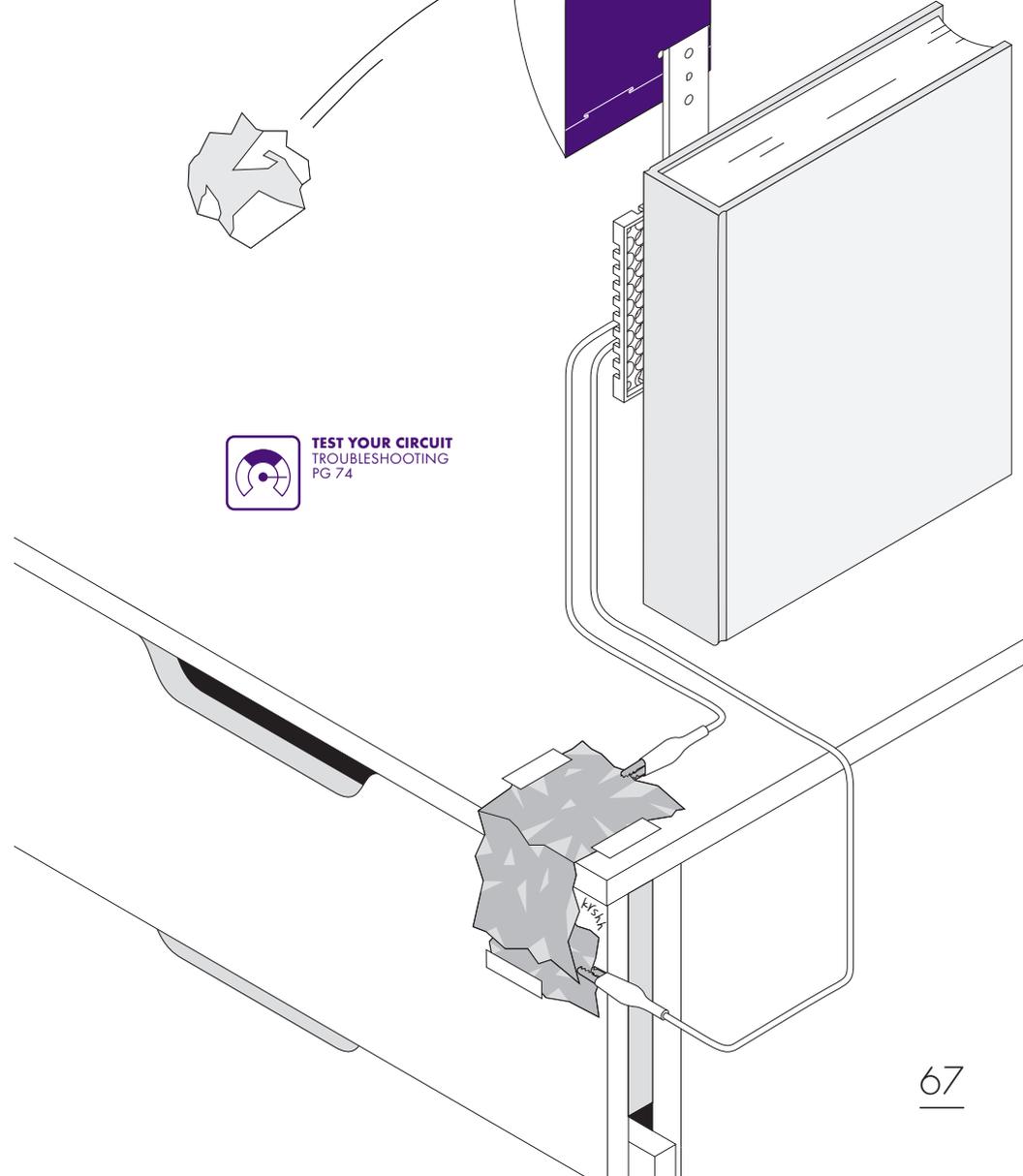
PRO TIP:
WRITE AN ACCUSATORY NOTE IN YOUR CRUMPLED PROJECTILE.

13

LAUNCH TIME! Opening the drawer will make the pieces of foil touch and activate the servo.



TEST YOUR CIRCUIT
TROUBLESHOOTING
PG 74



PLAY!



PRETEND TO BE THE INTRUDER TRYING TO RUMMAGE THROUGH YOUR DRAWER. Is the launcher pointed in the right direction? What could you do to make your defense system more effective?

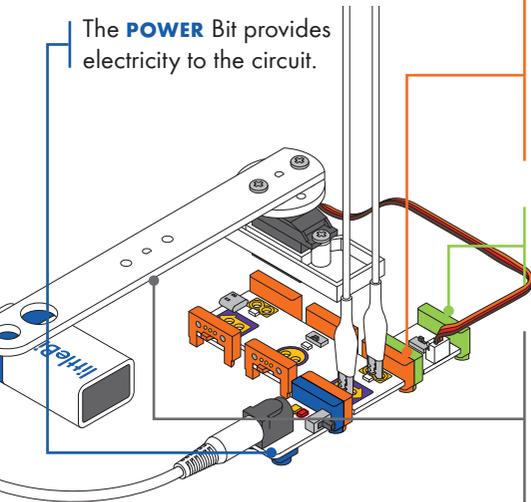
HOW IT WORKS

The **POWER** Bit provides electricity to the circuit.

The **MAKEY MAKEY** Bit sends an **ON** signal when the **LEFT ARROW** pad and **EARTH** pad are connected. This happens when the drawer opens and the two pieces of foil touch, allowing electricity to flow through the circuit.

When the **SERVO** receives the signal, it turns, rotating the arm and throwing the projectile.

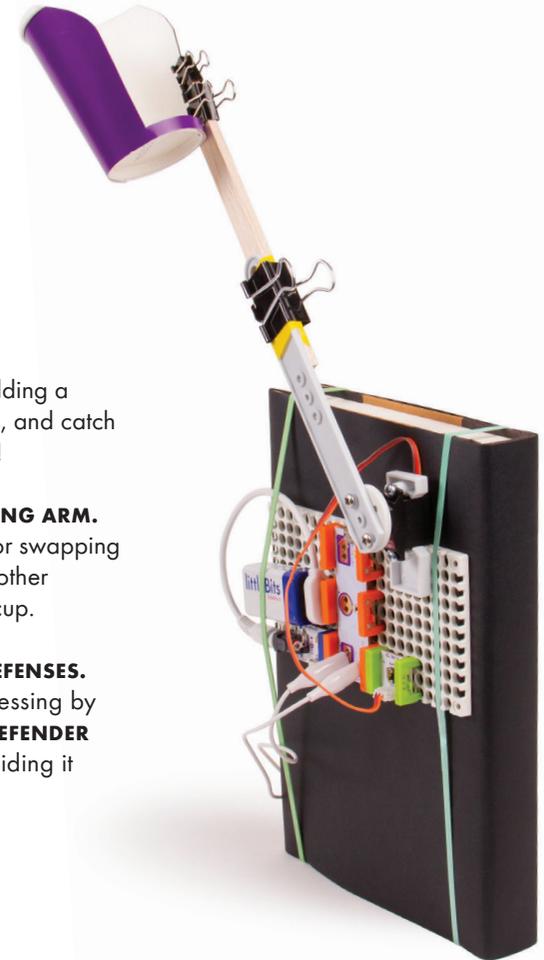
MECHANICAL ARM: As the bucket gets farther from the hub, it also takes more force to move it. If your arm gets too long it will overpower the servo motor and will be hard to move. This relationship between distance and force is called torque.



REMIX

TRY SOME OF THESE IDEAS TO CUSTOMIZE YOUR INVENTION. THEN COME UP WITH YOUR OWN!

- A ADD AN ALARM.** Try adding a buzzer to your defenses, and catch your intruders in the act!
- B IMPROVE THE LAUNCHING ARM.** Try extending the arm, or swapping the bucket template for other materials, like a paper cup.
- C CAMOUFLAGE YOUR DEFENSES.** Keep your intruders guessing by placing the **DOMAIN DEFENDER** in different places, or hiding it behind other objects.



SHARE

SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

MAKE A REACTION VIDEO OF YOUR WOULD-BE BURGLAR, THEN SHOW THE COMMUNITY HOW YOU PROTECTED YOUR SECRET STASH ON THE LITTLEBITS INVENT APP!

CHALLENGE

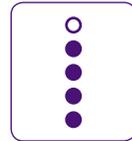
INVENT A KITCHEN CONTRAPTION

IT'S TIME TO START PLAYING WITH YOUR FOOD.

Automatic feeding machines, condiment catapults, an alarm that lets you know when you've added the perfect amount a milk to your cereal...your mission for this challenge is to invent the future of cooking and eating.



TIME



LEVEL

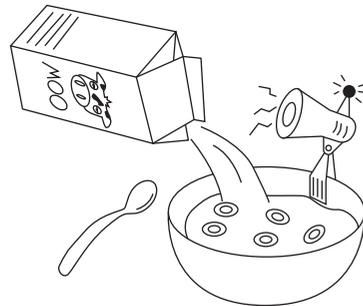
CREATE

1 CREATE A LIST OF FOOD YOU EAT EVERY DAY. Think about the issues you have when you prepare, cook, and eat those foods (e.g. getting ingredients, cooking, eating, cleaning up).

2 SELECT THE ISSUE YOU WANT TO WORK ON. It could be the one that sounds the most fun to solve or makes your life easier.

3 LOOK THROUGH YOUR BITS™ AND MATERIALS AND THINK ABOUT HOW EACH ONE COULD HELP. Could motion, light, or sound be useful? If you're not sure what a Bit™ does or how it could help, snap it into a circuit and start to play with it. If you're still stumped, read through the "Bit Index" section (pages 6-21).

4 SKETCH OUT IDEAS, PICK YOUR FAVORITE, AND CREATE A PROTOTYPE. Don't worry about getting everything right on the first try, though. The important thing is to just get started and experiment.



PRO TIP: TAKE A LOOK AT EVERYDAY OBJECTS YOU COULD MAKE BETTER WITH BITS. CHAIRS, POTS & PANS, AND MILK JUGS COULD ALL BE GREAT STARTING POINTS FOR BUILDING A PROTOTYPE.

PLAY!

TEST YOUR PROTOTYPE. Set up your invention and see what you can learn about how it works. Your invention might not work the way you thought, but that's OK. It's part of the invention process! Take note of what works and what doesn't so you can improve it.



REMIX

A DID PLAYING WITH YOUR INVENTION GO THE WAY YOU EXPECTED? Now's your chance to experiment with fixes and improvements. You might need to make things sturdier, work on the mechanics of moving parts, or try using different Bits to achieve your mission.

B MAKE WACKY AND WEIRD EXPERIMENTS PART OF YOUR INVENTION PROCESS. Sometimes really great ideas come from unexpected places. Close your eyes and pick a Bit at random. What would happen if you combined it with your invention?

SHARE

SHARE YOUR INVENTION ON THE LITTLEBITS™ INVENT APP

1 TAKE PHOTOS OR VIDEOS OF YOUR INVENTION IN ACTION AND POST THEM TO THE "INVENT A KITCHEN CONTRAPTION" CHALLENGE PAGE ON THE LITTLEBITS INVENT APP. Share any photos or videos of your early prototypes, too. The littleBits community loves to see all the things you tried on your invention journey.

2 HAVE AN INVENTION DINNER PARTY WITH FRIENDS. Gather your friends for a night of inventing and eating. Share your invention with them and see what else you can create together to transform a simple dinner into a meal of the future.

WANT MORE INVENTIONS?

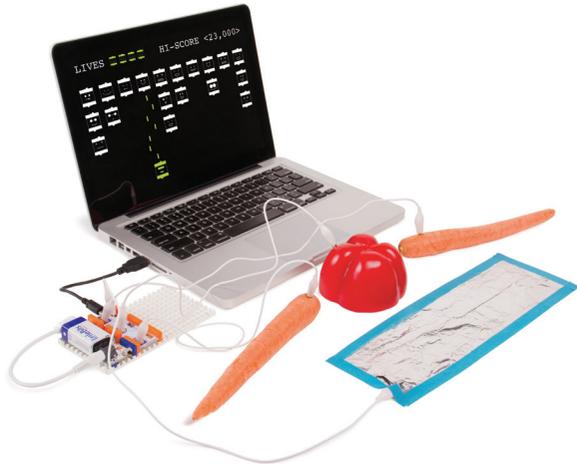
Find these inventions on the littleBits™ Invent app.



INVENTION 06

TOP SECRET SAFE

Keep prying eyes from your prized possessions with a safe that's hidden in plain sight! This trigger-activated box opens when the right book is pulled.



INVENTION 07

CARROT CONTROL PAD

Can you use food to save the galaxy? This Carrot Control Pad uses your Makey Makey® Bit™ to control your favorite computer game.



INVENTION 08

PROGRAMMABLE POP-UP PUPPET

Every kid needs a partner in crime. Create a Programmable Pop-up Puppet that can play pranks on Mom, protect your computer, and be coded to say anything you want!

GLOSSARY

BRAINSTORM Brainstorming is a creative activity that helps generate a large number of ideas. There are many variations on how to brainstorm. The important thing is to let your imagination run wild. Often, the best solutions come from unexpected places.

CIRCUIT Circuits are paths that electric currents follow. **CLOCKWISE** Turning in the same direction as the hands of a clock. **CONDUCTOR** A conductor is a material that easily allows an electrical current to pass through it. **COUNTERCLOCKWISE** Turning in the opposite direction as the hands of a clock.

CREATE This is the first phase of the Invention Cycle where you explore new ideas and bring them to life with your first prototype. **INPUT** Input Bits™ are buttons, switches and sensors; the eyes and ears of the system. They interpret their surroundings to make things happen. **INSULATOR**

An insulator is a material that does not allow an electrical current to pass through it. **INVENTION** Something created with your own ingenuity, experimentation, and imagination. **OUTPUT** Output Bits take orders from input Bits to convey the visual, physical, and audible. They generally do something – like light up, buzz, or move.

PLAY This is the second phase of the Invention Cycle where you test your prototype for the first time. **POWER** The energy used to do work. **PROTOTYPE** A model designed to test an idea. **REMIX** This is the third phase of the Invention Cycle where you experiment with making changes to your prototype to see how you can improve it. **SENSOR** A

sensor is a device that detects or measures something from its surrounding environment and converts it into an electrical signal. **SHARE** This is the fourth phase of the Invention Cycle where you show your invention to others to get feedback and inspire other inventors. **SIGNAL** A signal is an electrical message sent from one Bit™ to another.

Input Bits change the message this signal sends. Output Bits translate this signal into an action (like light, motion, or sound). **VOLTS** The unit of measurement for electric pressure that pushes an electrical current through a circuit. Voltage is usually supplied by a battery or a generator. **WIRE** The wire allows you to put more space between your Bits. Try it whenever you need to break up your chain, like when you need to put

a light at the top of a model building.

TROUBLESHOOTING

MY CIRCUIT ISN'T WORKING

- Make sure your power Bit™ is on. You should see a red LED illuminated.
- Try swapping in a new 9 volt battery. Low batteries can cause a circuit to misbehave. Bits™ have different power demands. For example: a motor may appear to not be working while a light still shines brightly.
- Ensure the power cable is securely fastened to both the battery and the power Bit.
- Make sure your Bits are arranged in the correct order. Remember that you always need a power Bit & power supply at the beginning of each circuit, and an output Bit at the end. If the last Bit in your chain is an input, then it won't do anything to affect your circuit.
- Check your connections. Are all the Bits securely snapped to each other? You can also try gently wiping down the ends of the bitSnaps™ with a soft cloth (like your sleeve). Sometimes dust gets in the way of a strong connection. Try unsnapping, cleaning the bitSnaps, and snapping it all back together again.

I AM HAVING TROUBLE WITH MY SOUND TRIGGER CIRCUIT THE CIRCUIT TURNS ON AND STAYS ON, OR DOES NOT ACTIVATE AT ALL

- You may need to adjust the sensitivity of the sound trigger. Turn the adjustment dial fully counterclockwise with the purple screwdriver, setting the sound trigger to the lowest sensitivity. Then in small increments, turn the dial clockwise. After each turn, clap and wait 3-5 seconds. Keep doing this until the circuit turns on at the desired volume. Try adding a bargraph to see when the sound trigger is sending a signal.

USING THE SOUND TRIGGER WITH THE BUZZER - You may find that the buzzer doesn't turn off! That's because the buzzer makes sound that sets off the sound trigger, causing a feedback loop. You'll have to finely tune the sound trigger's sensitivity to find the sweet spot that triggers the buzzer, but also allows it to turn off. You can also try turning down the volume of the buzzer with the dimmer Bit to make adjustments easier.

MAKEY MAKEY® BIT IS NOT TRIGGERING (I DON'T SEE GREEN LIGHTS ON THE BOARD)

- **TOUCHING MY CONDUCTIVE OBJECTS/ALLIGATOR CLIPS SEEMS TO HAVE NO EFFECT ON MY CIRCUIT** - Every person has a different level of conductivity. Depending on how dry the weather is, or how sweaty your hands are, the Makey Makey Bit will respond in different ways. To make yourself a more effective conductor, try dampening your hands with a wet towel.
- **UNRESPONSIVE ALLIGATOR CLIPS** - Alligator clips can get dirty from being clipped on to various foods and materials. Make sure they are nice and clean for best results.
- **CORRECT BITSNAP TO BITSNAP** - Make sure that the Bit you are trying to activate aligns with the keypad you are clipped into. The green light will indicate the bitSnap you should be connected to.
- **UNRESPONSIVE MATERIALS** - Some things like fruit have skins that are less conductive than their pulp. Apples, for example, sometimes have shiny waxy skin that insulates the apples and keeps them from passing electricity. To make an apple more conductive, you can either wash it with warm water, or simply take a bite out of it. Some metals

become less conductive over time because of corrosion or weathering. To fix this, simply clean your metal object with warm soapy water, then dry thoroughly. It also helps to know what is conductive and what is not - check out the "Conductivity" section for more information (pages 24-25).

MAKEY MAKEY BIT NOT WORKING AS EXPECTED

- **INPUTS AFTER THE MAKEY MAKEY BIT** - Any signal sent from the Makey Makey Bit will be affected by the inputs after it. For example, a dimmer after the Makey Makey Bit will control how much signal is passed onto the following Bits.
- **INPUT BEFORE THE MAKEY MAKEY BIT** - A signal from an input to the Makey Makey Bit will send a short **ON** signal to the following Bit. Inputs before the Makey Makey Bit will not affect your ability to send a signal to the rest of your circuit when you connect a keypads (left arrow, right arrow, or space/click) to an earth pad. When the Makey Makey Bit is connected to the computer, input Bits control the associated computer keys.
- **CORRECT BITSNAP TO BITSNAP** - Make sure that the Bit you are trying to activate aligns with the keypad you are clipped into. The green light will indicate which bitSnap you should be connected to.

MAKEY MAKEY BIT NOT WORKING WITH THE COMPUTER

MICRO USB - The micro USB cable does NOT power the Makey Makey Bit. It only passes commands between the Makey Makey Bit and the computer. You will also need to connect the Makey Makey Bit to a power Bit to use it.

- ★ Occasionally Bits get updated, so the features or appearance of your Bits may differ from those used in this guide.

I AM HAVING TROUBLE OPENING MY ALLIGATOR CLIPS

- If the alligator clips keep slipping to the side while you're trying to open them, try slipping the plastic sleeves off the clips. To get the sleeve back onto the clip, clip it onto a piece of cardboard, then slip the sleeve over the end.
- Alligator clips can get dirty from clipping to various materials. Wash your clips with soap and water and dry them thoroughly before trying to open them.

MY SERVO IS SHAKING

- Check your battery. Try swapping in a new one. Low batteries can cause the servo to misbehave.
- Make sure the servo's wire is firmly connected to the board.
- The servo motor can only take so much weight. If you have something attached to it, you might need to lighten the load.

HOW CAN I CHANGE THE POSITION OF MY MECHANICAL ARM?

Did you know that you can remove the servo hub from the servo motor? To do this, hold the black part of the servo motor and pull the hub away from it. It should pop off. Then you can rotate the position of the arm to your liking and press the hub back on. You may need to try this a few times to get it just right. Be careful to align the little teeth on the servo gear with the ridges inside the hole on the servo hub.

STILL HAVING TROUBLE?

Visit littleBits.cc/faq or contact our customer service team at support@littleBits.cc.

▲ WARNING

- This product contains small magnets. Swallowed magnets can stick together across intestines causing serious infections and death. Seek immediate medical attention if magnets are swallowed or inhaled.
- Most modules are small parts. DO NOT allow children under 3 years old to play with or be near this product.
- NEVER connect any modules or circuits to any AC electrical outlet.
- Do not touch or hold any moving parts of modules while they are operating.
- Keep conductive materials (such as aluminum foil, staples, paper clips, etc.) away from the circuit and the connector terminals.
- Always turn off circuits when not in use or when left unattended.
- Never use modules in or near any liquid.
- Never use in any extreme environments such as extreme hot or cold, high humidity, dust or sand.
- Modules are subject to damage by static electricity. Handle with care.
- Some modules may become warm to the touch when used in certain circuit designs. This is normal. Rearrange modules or discontinue using if they become excessively hot.
- Discontinue use of any modules that malfunction, become damaged or broken.

VERY IMPORTANT NOTE

- Several inventions in this Kit involve the use of sharp objects. These tools should be used ONLY under direct adult supervision.

BATTERIES

- Non-rechargeable batteries are not to be recharged.
- Rechargeable batteries are to be removed from the product before being charged.
- Rechargeable batteries are only to be charged under adult supervision.

INSTRUCTIONS

We recommend using littleBits brand 9-volt batteries, but standard alkaline or standard rechargeable batteries may also be used. Properly discard and replace exhausted batteries.

- Do not connect the two battery terminals to any conducting material.

CARE AND CLEANING

Clean modules ONLY by wiping with a dry cloth. If necessary, isopropyl alcohol on a cloth may be used sparingly, and then wipe with a dry cloth.

DO NOT use any other cleaning products on modules.

FC RADIO AND TELEVISION INTERFERENCE

This device complies with the limits for a Class B digital device, pursuant to 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.

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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commissions rules.

Got a question?

Visit littleBits.cc/faq for troubleshooting and additional support.

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www.littleBits.cc

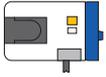
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Designed By: littleBits Electronics Inc.

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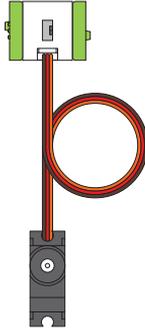
p1 **POWER**



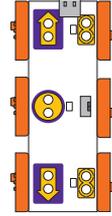
i20 **SOUND TRIGGER**



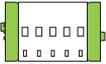
i6 **DIMMER**



o11 **SERVO**



w14 **MAKEY MAKEY[®] BIT[™]**



o9 **BARGRAPH**



o6 **BUZZER**

littleBits **RULE YOUR ROOM KIT**

ACCESSORIES

- 9V battery & cable
- adhesive shoes (×6)
- servo hub
- mechanical arm
- servo mount
- mounting boards (×2)
- micro USB cable
- alligator clips (×4)
- screwdriver
- #6 screws (×4)