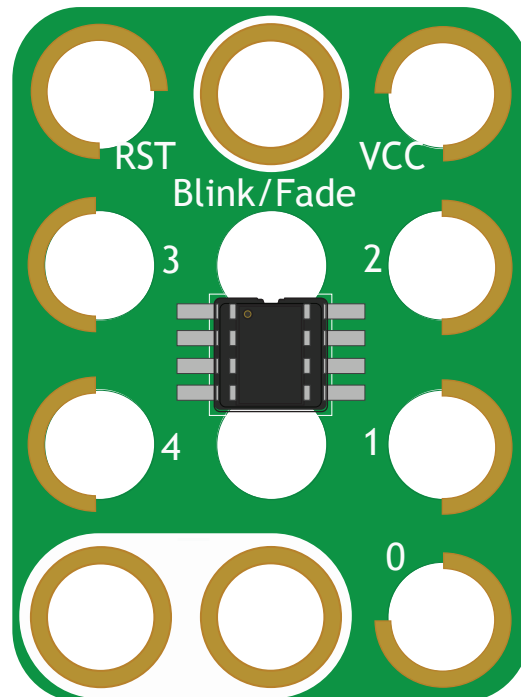# CRAZY CIRCUITS

User Guide

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- How to use parts
- How to use Conductive Tape
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- How to use the Blink/Fade Board

How to use parts

Crazy Circuits parts come in a wide variety of size, shape, and colors but all work the same way. We use color to indicate the type of part being used as well as which connection points are Ground (Negative). Below you'll find a chart that shows you which types of parts are which colors.

White - Always Ground (Negative)

Black - Outputs. Parts that do something, such as LEDs.

Red - Inputs. Parts that react to the world, such as buttons.

Orange - Power Inputs.

Purple - Connectors. Parts that adapt other parts into Crazy Circuits.

Green - Programed Parts. Parts that are either preprogramed or can be programed.
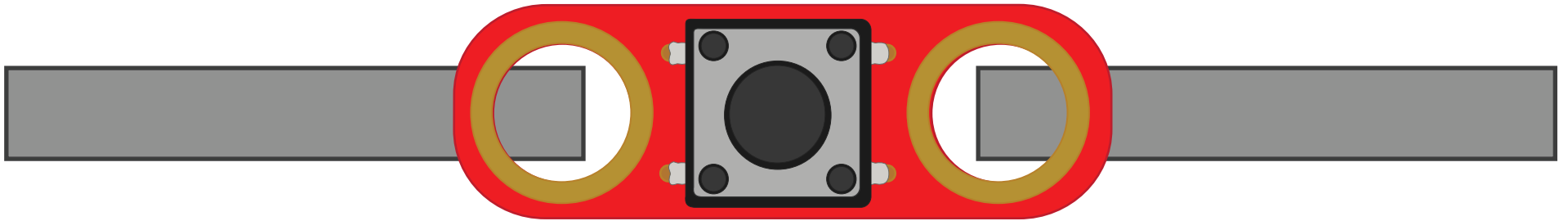
How parts connect

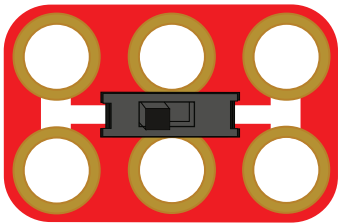CR2032 Battery Holder

Jumbo-LED

Positive

Negative

The colored contacts are Positive
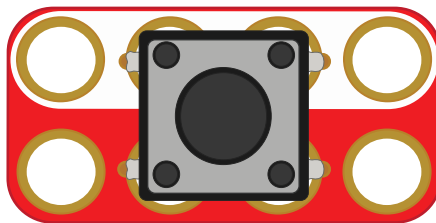White is always Negative

Push Button

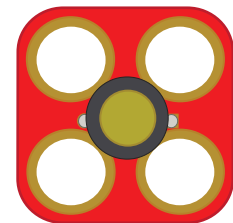If the chip is only one color polarity does not matter.

You will find this with switches and buttons.

Slide Switch

Jumbo Pushbutton

Tilt Switch

How to use Conductive Tape

Crazy Circuits parts work with a variety of conductive materials, but our favorite is our Nylon Conductive Tape. When using Crazy Circuits with any Brick Based building system we recommend using our 1/8th Inch wide tape. Using this tape allows Crazy Circuits Parts to pressure fit onto building bricks and creates a solid electrical connection.

In the next couple of pages we show you some basic tips and tricks to using Conductive Nylon Tape with building bricks. Follow these simple directions and your projects will come together with ease.

Note: Never use copper foil tape with building bricks. It breaks far too easily and is near impossible to remove from building bricks.

Halfway over a stud

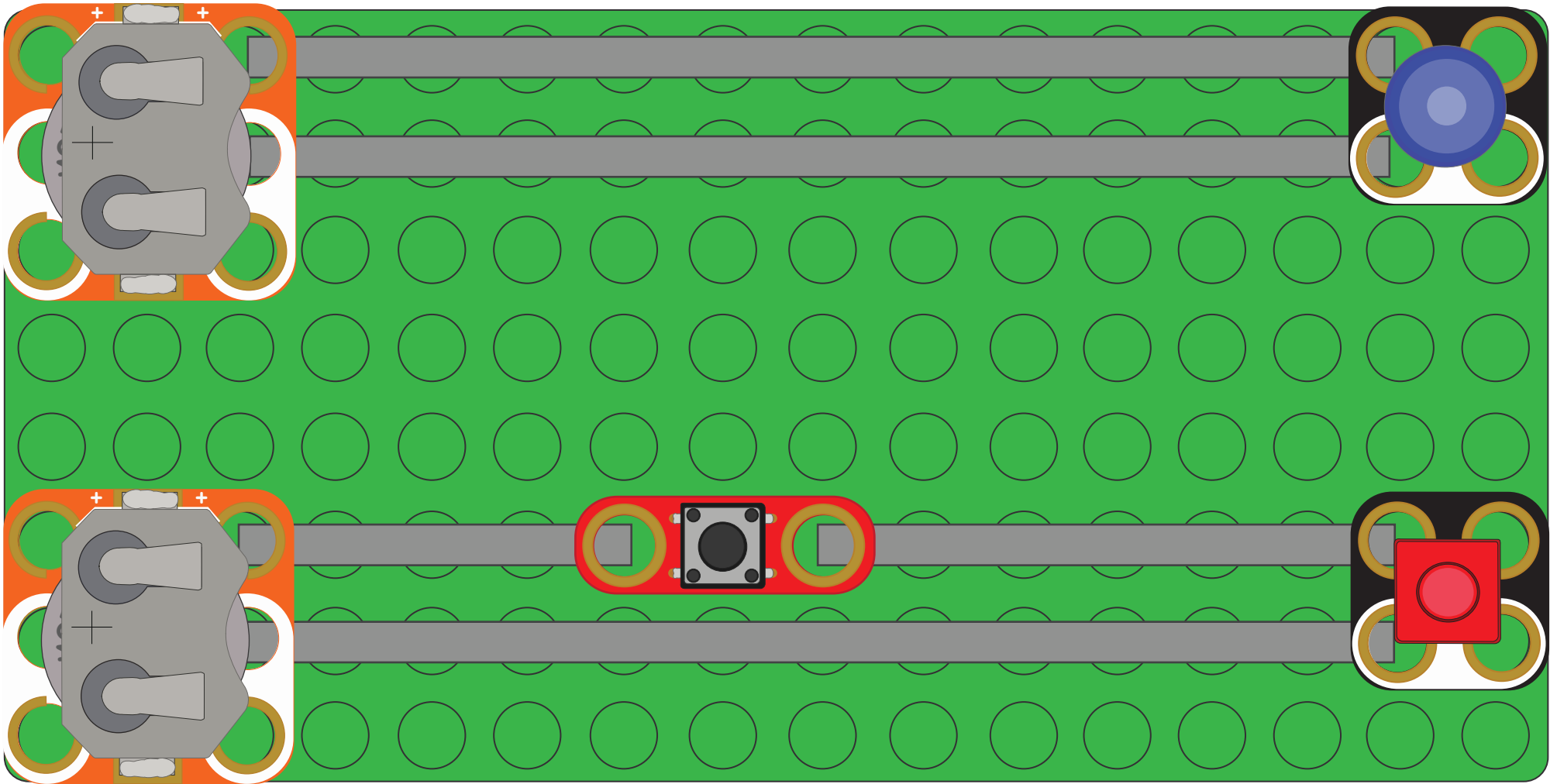**Jumbo LED**   **CR2032 Battery Holder**
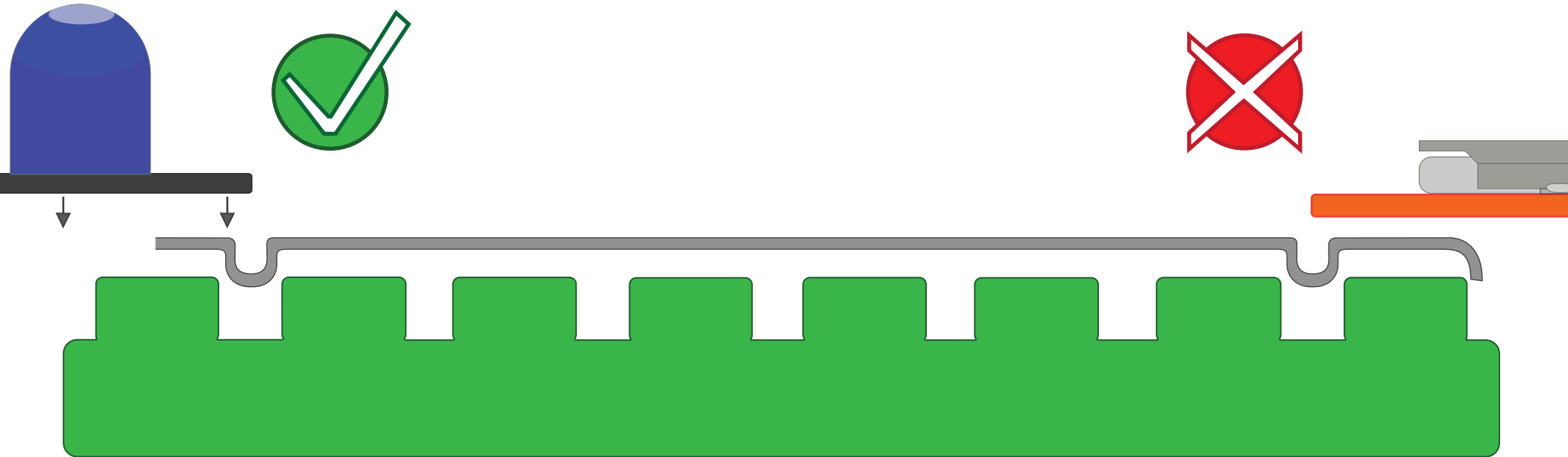
1. Start with tape halfway over a stud.
2. Press down chip.
3. Run tape to next chip.
4. Cut to end halfway over the stud.
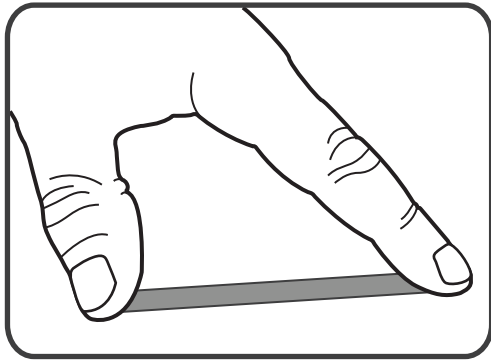5. Place second chip.

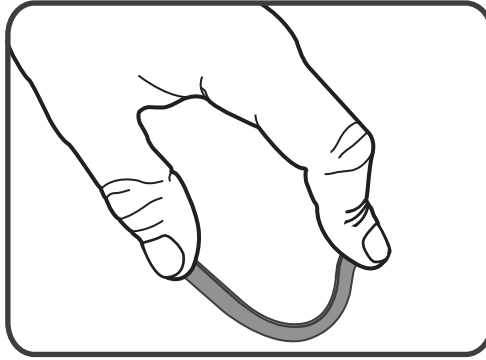# Top View
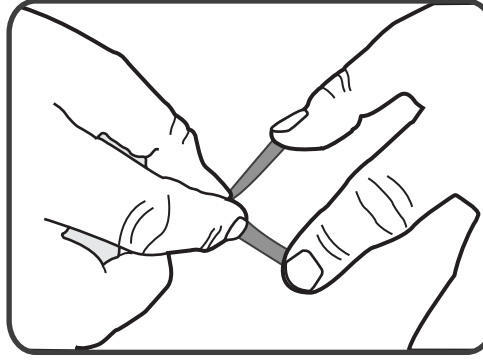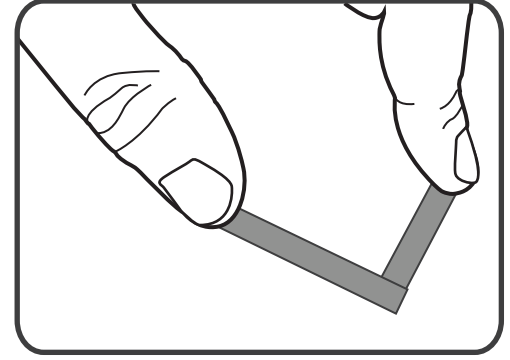
Always On
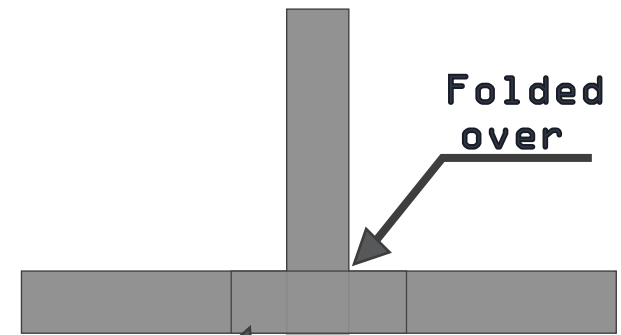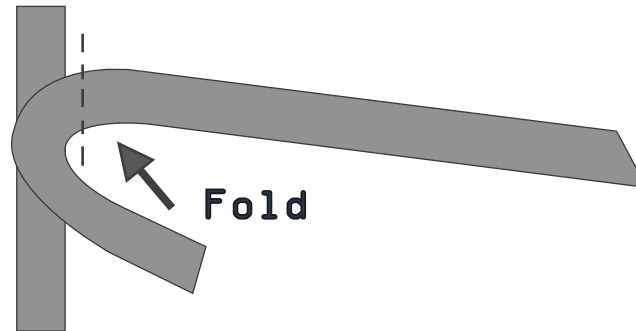

Push for light

Tape tips and tricks
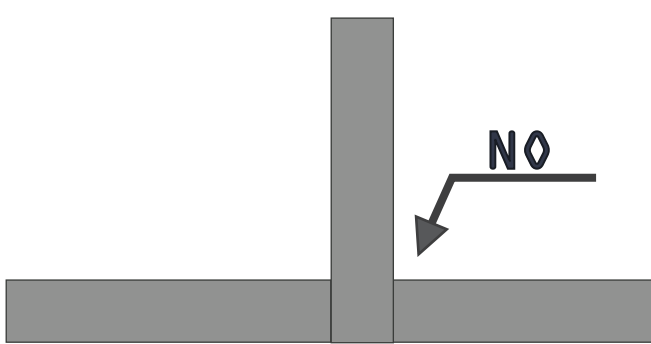
·Right angle.

1.

2.

3.

4.

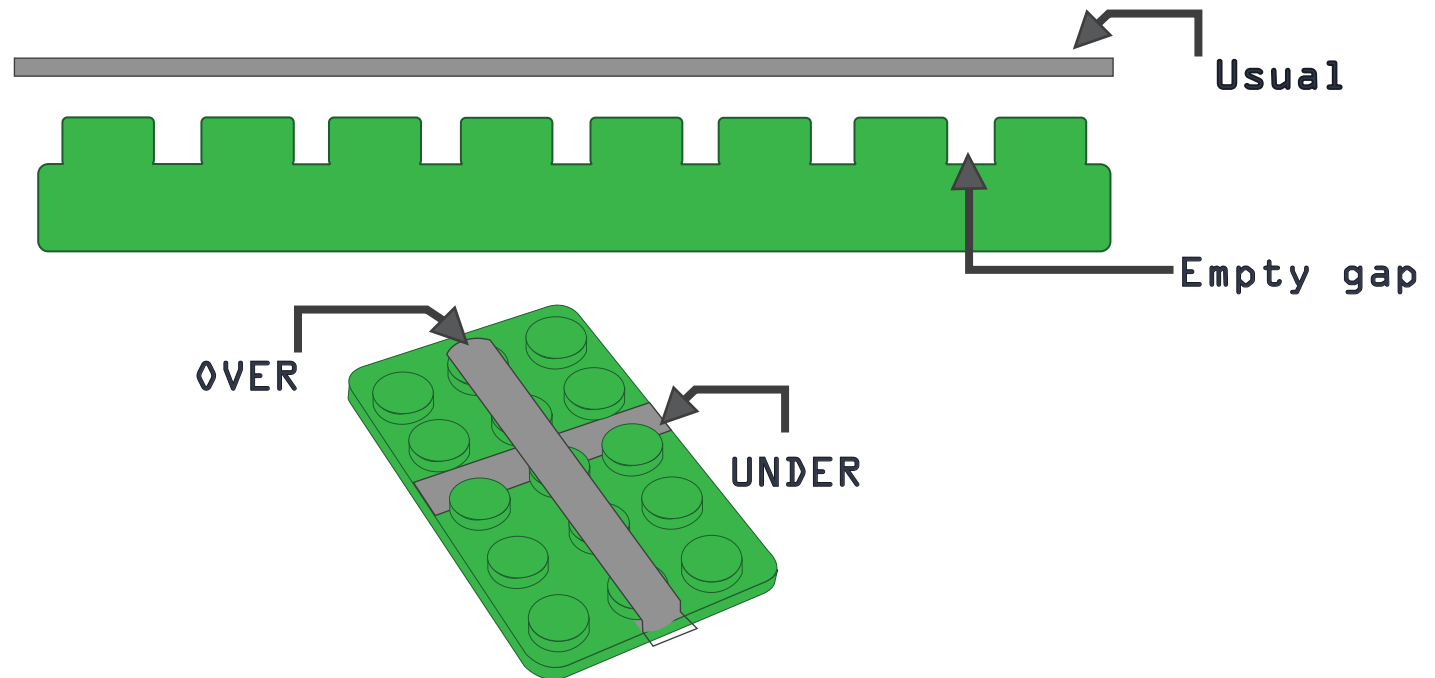## ·Connecting two independent pieces·

-Tape is not reliably conductive on the bottom

-Fold over on edge
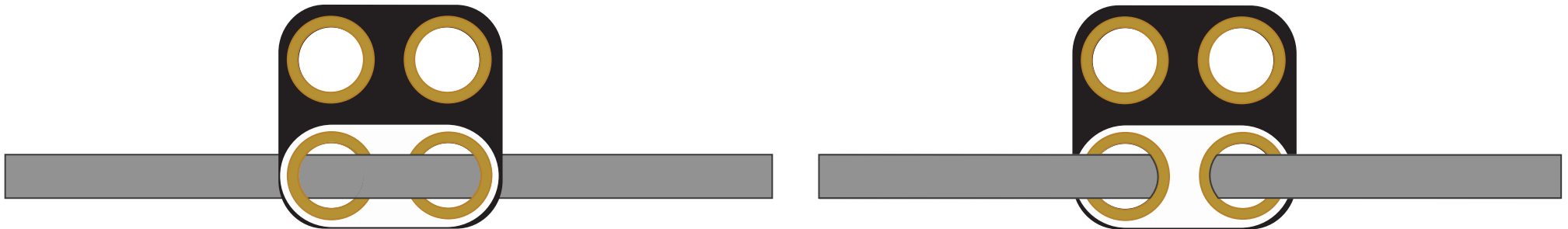
NO

Fold

Folded over

Secure with 3rd piece of tape

•Over and under studs.

-Jump tape lines by going between studs

Usual

Empty gap

OVER

UNDER

•With paper projects.

-Weave through Crazy Circuits parts

How to use Conductive Thread

All Crazy Circuits parts are naturally compatible with Conductive Thread for sewing. If you're familiar with sewing just think of Crazy Circuits parts as really fancy buttons.

When using Conductive Thread for sewing follow these tips.

- Conductive Thread should never be used with a sewing machine.
- Conductive Thread acts just like wire or tape. Cross a positive and a negative line of thread will cause a short circuit.
- Be careful about loose bits of thread. These are the #1 cause of issues.
- Metal button snaps are great ways to add switches to sewing projects.
- Never machine wash projects. If you must wash a project, remove all batteries, hand wash, and left air dry.
- In very complicated sewing projects you may wish to use a sewing machine and regular thread to secure your lines of conductive thread. This prevents loose thread odds and ends.
- Make sure to put your battery holder somewhere safe on your project. Sewing a pocket or pouch for your battery holder is never a bad idea.
- The Blink/Fade Board, Robotics Board, and Touch Board all work perfectly with sewing projects.
- Check out CrazyCircuits.com for sewing guides and project ideas.

Thread Guide

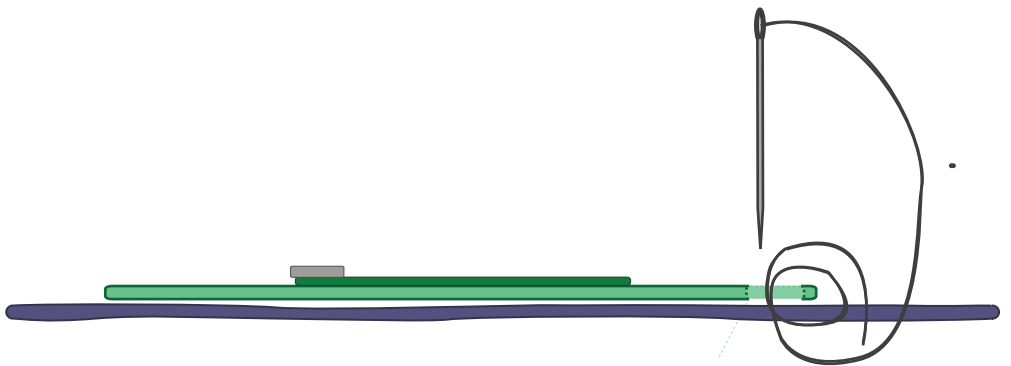**1**
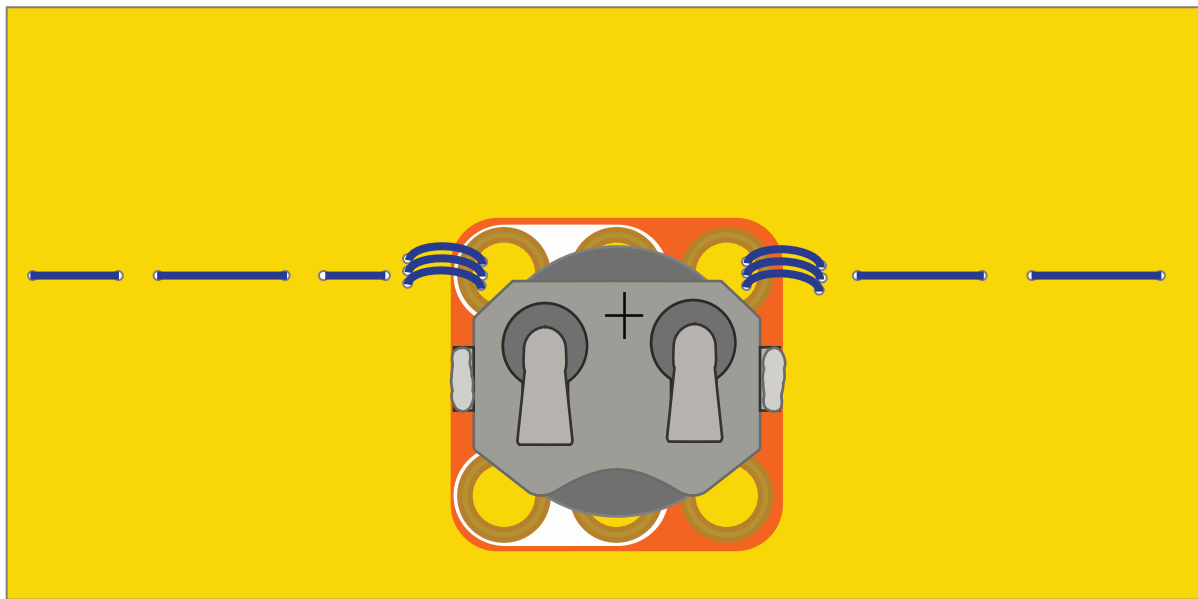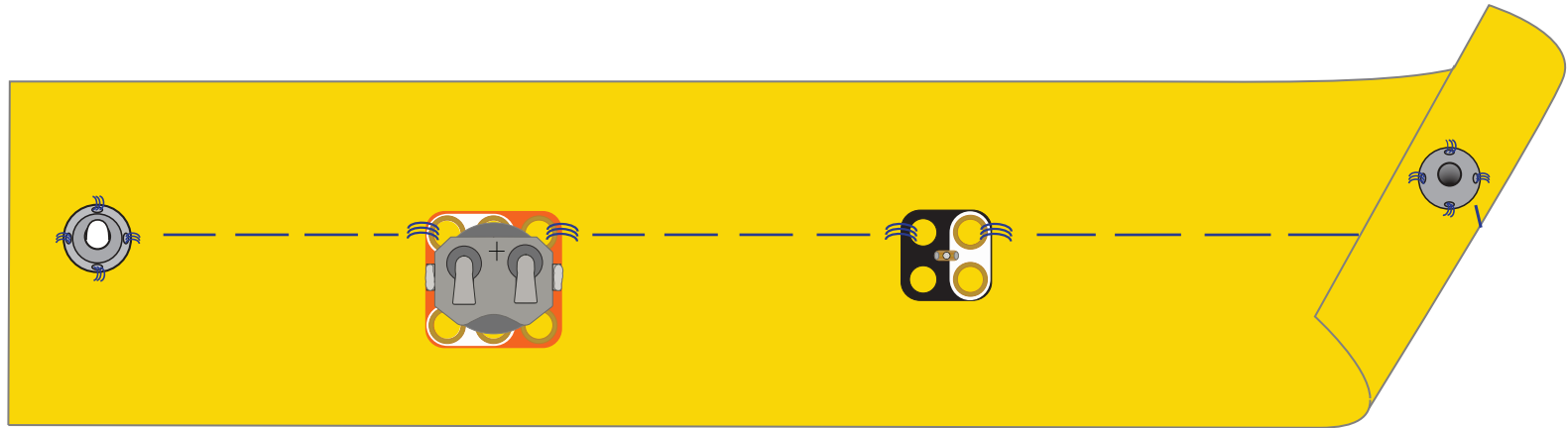
Conductive Thread

Touch Board

Hole

Fabric
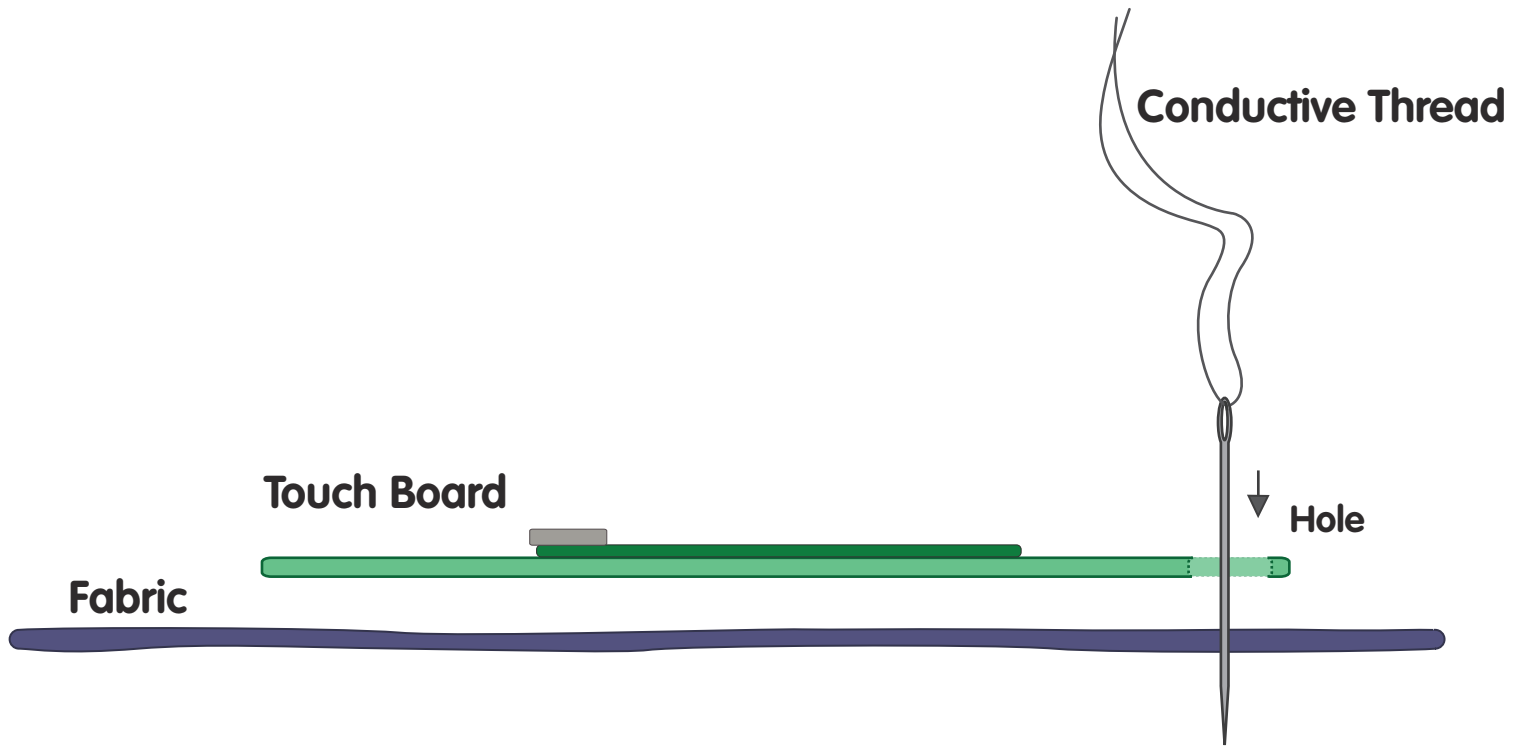
2
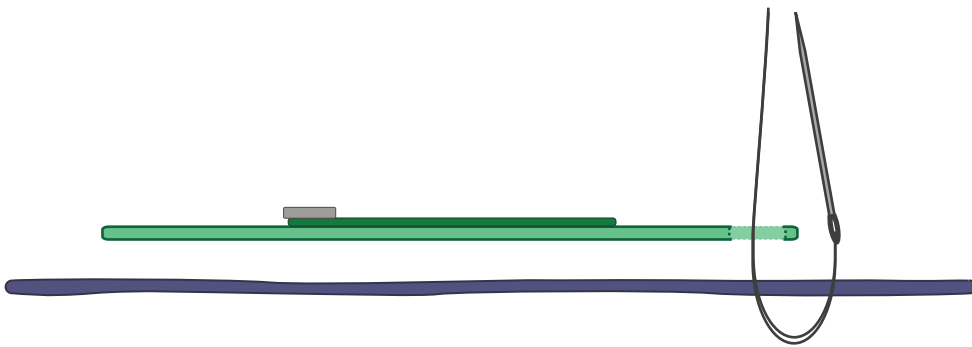
3

Bracelet using snaps

Blink Fade Board

The Crazy Circuits Blink/Fade Board is a fun way to add effects to your LEDs. The Board has the ability to make LEDs fade, blink, and alternate blinking.

Connect the Blink/Fade Board together the same way you'd hook up any other part. Connect a 3V or 5V power source, such as our Coin Cell Holder, to the VCC and GND points on the board. Then connect any of the output points to the Positive side of an LED. Connect the Negative side of the LED to one of the GND points on the Blink/Fade Board.

You can easily hook up several LEDs to the same effect spot by wiring them up in Parallel. It is also entirely possible to run LEDs off every effect spot at the same time.

The Blink/Fade Board also works well with Conductive Thread. Directions and use will not change.

Blink Fade Schematic

GND/NEGATIVE

Reset

RST

Blink/Fade

3V POSITIVE

VCC

3

2

Fast Blink

Alternating
Blink

4

1

Fade in/out

0

GND/NEGATIVE

Fade in/out

RST

Blink/Fade

VCC

3

2

4

1

0