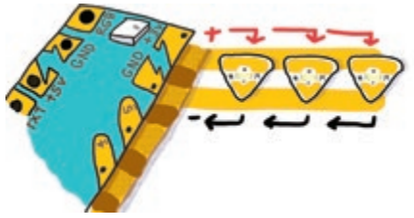
HOW CAN WE TURN ON A BUNCH OF LIGHTS?

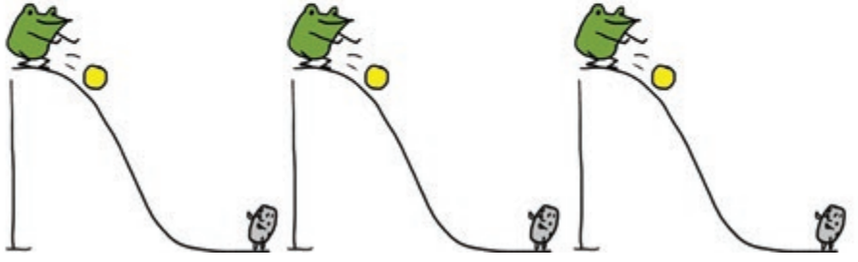
Here are a couple of ideas:

Parallel Circuits

Parallel circuits are where each LED shares a trace between +3V and GND. To connect LEDs in parallel, stick the LEDs next to each other between a (+) and a (-) track, like rungs on a ladder. You can turn the circuit on page **1-2** into a parallel circuit by just adding LEDs!

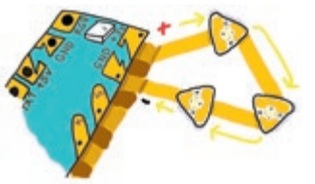


As the illustration above shows, all of the (+)'s go to the +3V pin, and all of the (-)'s connect to ground. This way the power source provides enough voltage ("height") for each LED. Since each LED needs at least 2.5V, connecting them in parallel to the +3V pin will turn all the LEDs on.



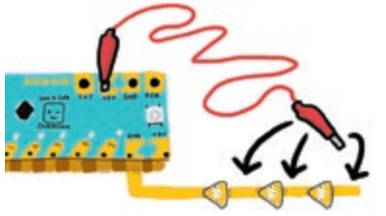
Series Circuits

Series circuits are where LEDs are connected back to back, like beads in a chain. The (+) of one LED goes to the (-) point of the next.



Since the LEDs are in a line, the required voltage also adds up so we'll need a higher voltage power source. For example, since each LED sticker requires 2.5V to shine brightly, to turn on 3 LEDs in series we will want a 7.5V power supply. They may still glow with less voltage, but not as bright.

If you want to try out a series circuit, connect 3 LED stickers in series like this:



First, make a circuit with copper tape going the GND pin. Leave gaps for LEDs and stick LEDs so that they all point toward GND.

Then, clip a wire such as an alligator clip to the +5V pad of the Chibi Chip and connect the other end to the (+) side of different stickers in the series chain.

You'll see that the more LEDs there are between the +5V and GND, the dimmer the lights are, until they don't turn on at all!