

How to Simulate an Arduino Project Without Hardware

Mokxi · one-page lesson plan

OBJECTIVE

Test a sketch and a wiring plan before any part arrives: build the circuit, write the code and press Run, all in a browser tab, in the example below.

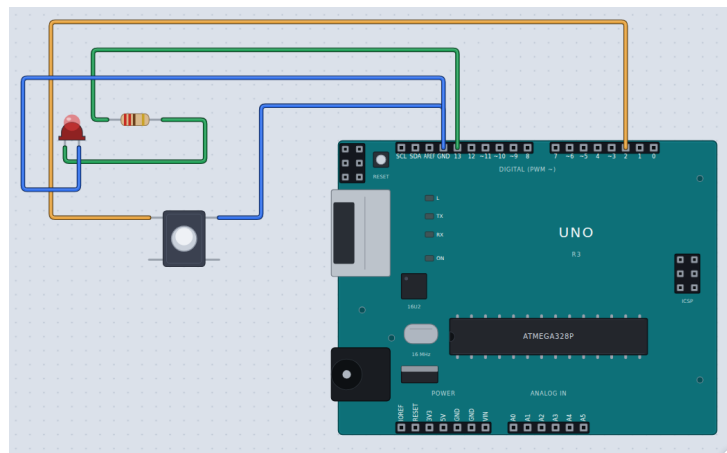
WHAT YOU NEED

Arduino Uno R3, Pushbutton, Resistor, LED

STEPS

- What "without hardware" actually means here — There are two different things people mean by testing Arduino code without hardware, and they solve different...
- From an idea to a working sketch, step by step — Open the editor and drop a board onto the canvas: an Arduino Uno for a first project, or an ESP32-C3 for one...
- What this catches before you solder anything — An LED wired backwards stays dark here exactly as it would on the bench, with the added benefit that nothing...
- What it will not catch — The live simulation has limits.

THE CIRCUIT



ASSESSMENT IDEA

Have the student build and run the toggle circuit from the sketch alone, with no board in hand, then list two things a real board would show that this could not.

<https://mokxi.com/learn/simulate-arduino-without-hardware>