

Week 4: Timing without a processor: the 555

Mokxi · one-page lesson plan

OBJECTIVE

An RC network sets the rate and a 555 turns it into a square wave.

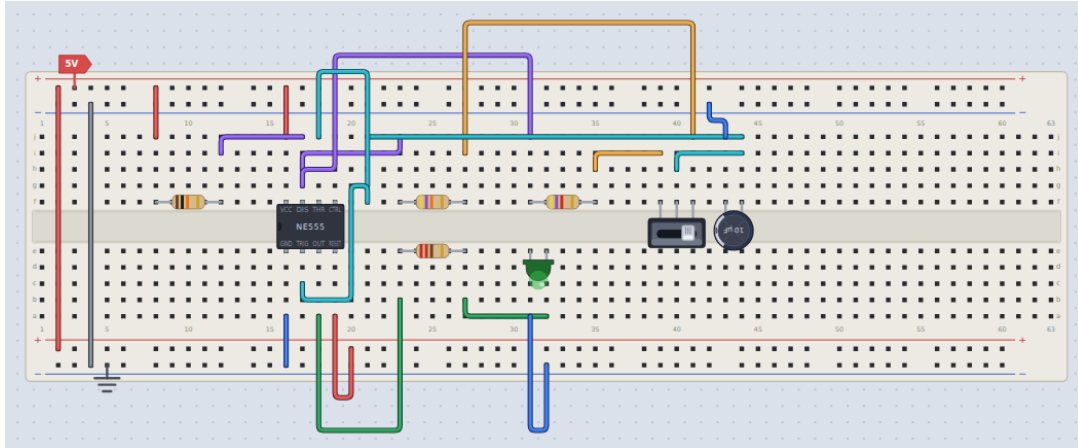
WHAT YOU NEED

NE555, capacitor, resistors, LED, slide switch, breadboard

STEPS

- Click the switch to change gear and count the blinks against a clock.
- Then choose R and C for a one second blink and for a five per second blink, build both, and measure them.
- Finish by opening the doorbell circuit, where the button gates the 555's reset pin instead of switching the load.

THE CIRCUIT



ASSESSMENT IDEA

Predicted against measured frequency for three different R and C pairs, with a sentence on the error. Mokxi integrates the capacitor in steps, so expect the measured rate to sit within a couple of percent of the formula rather than exactly on it.

<https://mokxi.com/curriculum#week-4>