

Tilt-a-Rainbow Mini: Demo Mode

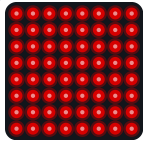
18 light shows and games for an 8×8 LED matrix, a tilt sensor and two buttons

Button 1 (GP14)
next mode

Button 2 (GP15)
previous mode

The mode number shows
first, then the show starts

After mode 18
comes mode 1 again



1 Fill Colors

LAB 5

All 64 pixels light together in red, green, blue, then white, 1.5 seconds each. The colors stay dim on purpose, so 64 lit pixels draw only about 300 mA.



2 Walk the Pixels

LAB 6

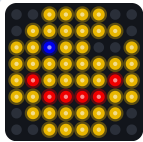
One purple pixel visits all 64 spots in strip order, 10 steps a second. Every row runs left to right, so after pixel 7 it jumps back to the left edge, one row down.



3 Row and Column Sweep

LAB 8

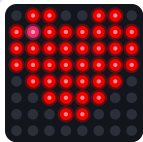
A green bar slides down the rows, then a blue bar slides across the columns. Straight bars show that `xy()` turns a column and a row into the right pixel number.



4 Winking Face

LABS 9 + 11

A yellow smiley with blue eyes blinks, then winks at you. Each frame is a picture typed as 8 lines of letters, and a color key turns every letter into a color.



5 Picture Show

LAB 10

Eight pictures slide in from the right, one after another: a smiley, heart, alien, ghost, rainbow, flower, fish and rocket. Each one stays still for about 2 seconds.



6 Scrolling Message

LAB 12

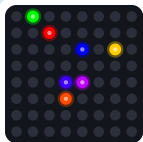
MOVING RAINBOW! slides past in rainbow letters, 9 columns a second. Each letter is a tiny picture 5 pixels tall. Change the text in MODES to show your own words.



7 Three Dots

LAB 18

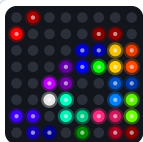
Red, green and blue dots drift slowly and bounce off all four edges. Each dot starts in a random spot and heads off in a random direction.



8 Seven Dots

LAB 18

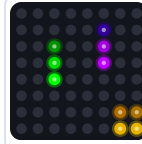
Seven dots, one for each color of the rainbow, move faster than in mode 7. It is the same module as mode 7, with different settings.



9 Colors with Trails

LAB 18

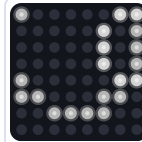
Twelve colors race around, each with a fading tail. Every frame, each pixel keeps 215 out of 256 parts of its color, so the old spots fade away bit by bit.



10 Rainbow Rain

LAB 18

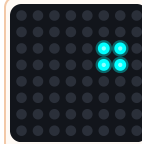
Five colored drops fall down the matrix, each at its own speed, leaving fading trails. A drop that reaches the bottom starts again at the top.



11 Ripple Rings

LAB 18

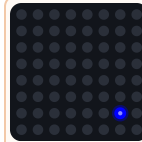
Colored rings start at random spots, grow, and fade away, like raindrops landing in a pond. A new ring starts about every 0.7 seconds.



12 Accelerometer Bubble

LAB 14 TILT

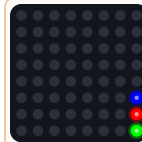
A 2×2 teal block slides toward the low side as you tilt the kit. The farther you tip it, the farther it goes. Lay the kit flat and it rests in the middle.



13 Tilt One Dot

LAB 18 TILT

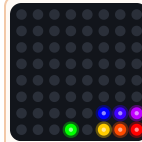
A blue ball rolls downhill, speeds up, and bounces off the walls. Friction slows it down, so hold the kit level and the ball rolls to a stop.



14 Tilt Three Dots

LAB 18 TILT

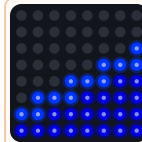
Red, green and blue balls roll as you tilt and bump into each other. Tip the kit toward a corner and watch them pile up there.



15 Tilt Seven Dots

LAB 18 TILT

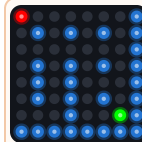
A whole rainbow of balls rolls around the tray. When two balls touch, they push apart and trade speed, like marbles bumping in a box.



16 Sloshing Water

LAB 15 TILT

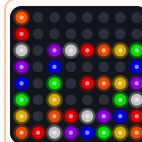
Stand the kit up like a picture frame and the bottom half fills with blue water. Rock it and the water sloshes, then settles. It always fills exactly 32 pixels.



17 Tilt-a-Maze

LAB 16 TILT

Roll the red ball through the light blue maze to the green hole. There are nine levels, shown as L1 to L9, each a little harder. Finish level 9 for a rainbow.



18 Tilt-a-Sketch

LAB 17 TILT

Tilt to draw with a blinking pen. The buttons are busy changing modes, so the pen changes color by itself with every step. Shake the kit hard to erase.



Make it start by itself

Save `19-template-main.py` on the Pico with the name `main.py`. The Pico runs `main.py` whenever it gets power, so the demo starts with no computer. Use a USB wall charger: many power banks switch off when the kit draws only a little current.

Tilt-a-Rainbow Mini kit, Lab 19. The pictures were drawn by a simulator running the real code.



Scan for Lab 19