Session 1 – Getting Started with the PicoBot

Goal: Mount the Pico correctly on the breadboard, configure Thonny, and run a first LED-blink script.

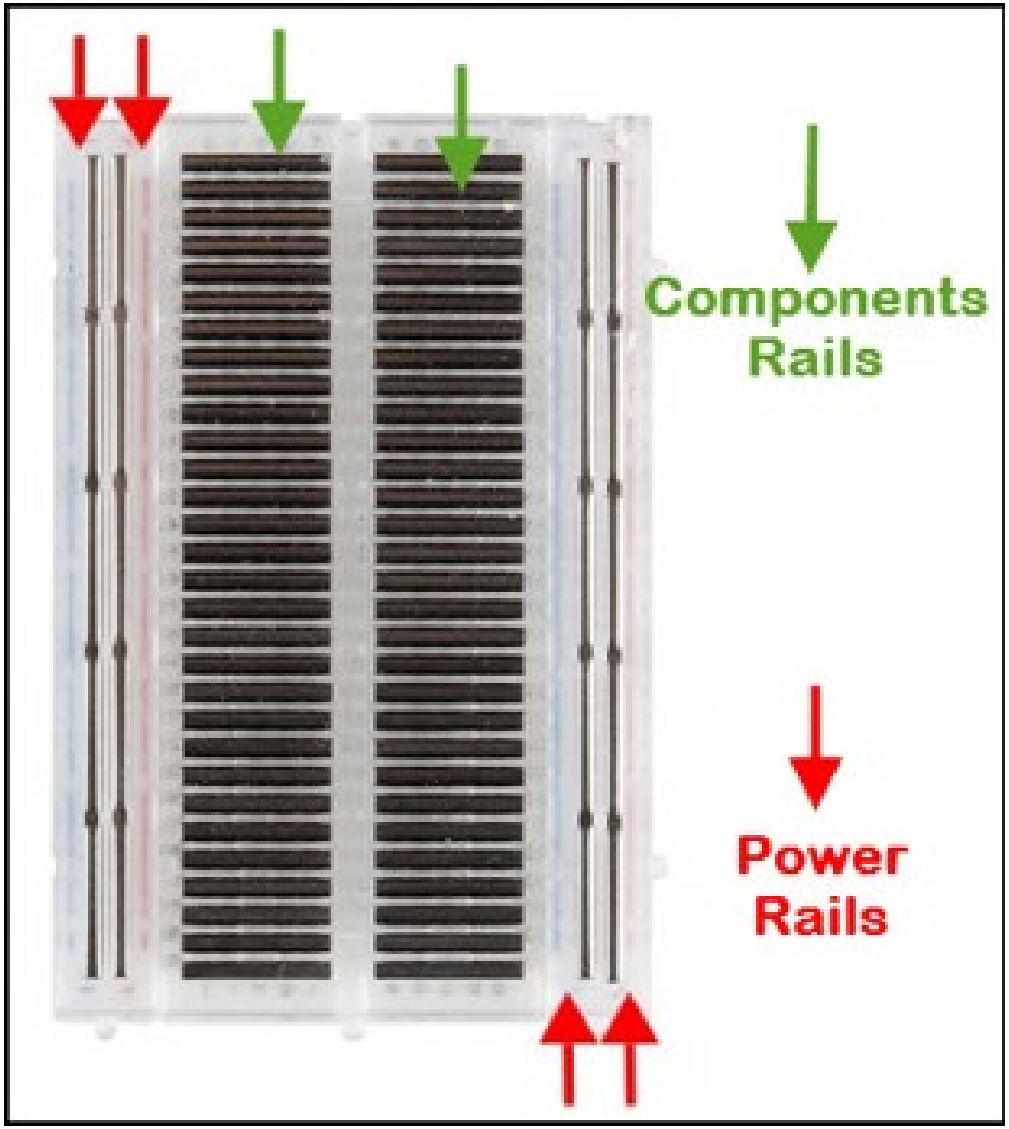
Learning Objectives

- Orient and seat the Pico WH on a breadboard without bending pins.
- Configure Thonny to use the MicroPython interpreter on the Pico.
- Run a script that blinks the onboard LED.

Materials

Item	Qty (per student)
Raspberry Pi Pico WH	1
Half-size breadboard	1
USB-A ↔ micro-USB data cable	1
Pi 500 workstation	1

Inside the breadboard

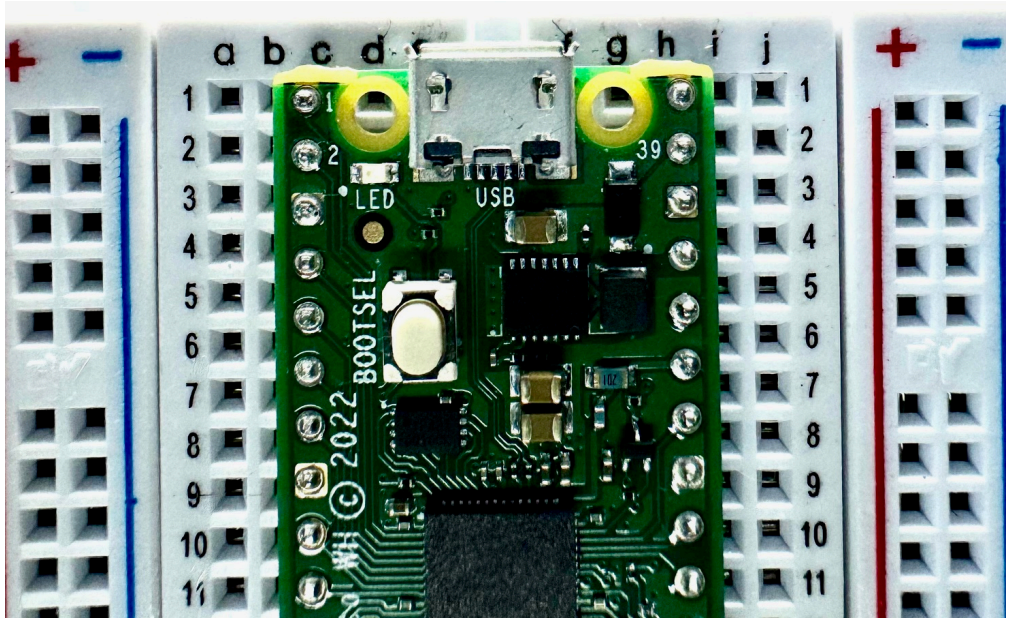


1 · Place the Pico on the Breadboard

1. Orient the breadboard like the image below.

2. Hold the Pico with the **USB port facing the top**.

3. The power rails should be + - on both sides.
4. Align the two rows of header pins over the **center groove**.
5. Make sure the component rails start with 1 at the top.
6. Press gently until all pins seat flush— Pico pin 1 should be in row 1 column c, pico pin 40 should be in row 1 column h.



> *Tip:* Keep the Pico flush with the top edge of the board—this leaves space for driver wiring below.

2 · Connect & Configure Thonny

1. Plug the Pico into the Pi 500 using the USB cable (no BOOTSEL needed).
2. Open **Thonny** → *Tools* ▸ *Options* ▸ *Interpreter*.
3. Select **Interpreter** = **MicroPython (Raspberry Pi Pico)**, **Port** = *Automatic* (or `/dev/ttyACM0`).

4. Click **OK**. The Shell should show the `>>>` MicroPython prompt.

3 · Blink the On-Board LED

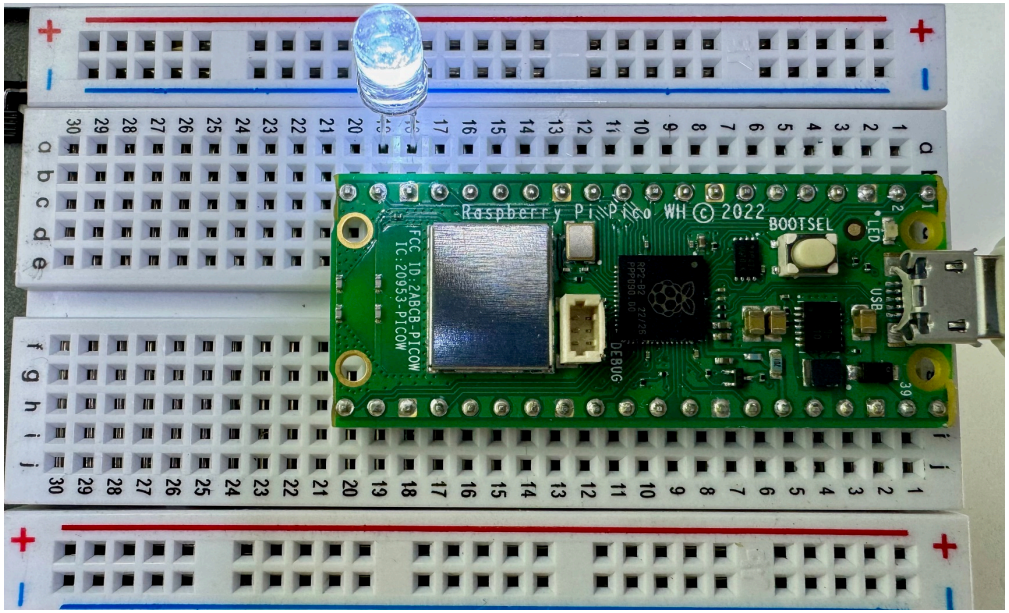
```
from picozero import pico_led
from time import sleep

while True:
    pico_led.on()
    sleep(0.5)
    pico_led.off()
    sleep(0.5)
```

Press ▶ Run. The small **green LED near the antenna** blinks five times.

4 · Blink an LED

1. Plug in the LED to the breadboard - long lead to GPIO 14, short lead to ground (GPIO 13)
2. Load the below
3. Press ▶ Run.




```
from picozero import LED
from time import sleep

led = LED(14)

led.on()
sleep(1)
led.off()
```

Try additional LED function https://picozero.readthedocs.io/en/latest/recipes.html#leds

What’s Next?

In **Session 2 – Build**, you’ll:

- Mount the caster wheel and TT motors on the purple chassis.
- Learn why a motor controller (H-bridge) is required.
- Spin a motor ON/OFF in code.

Save your LED script as `blink_led.py` on the Pico if you'd like to keep it for reference.

Check-Out

- Pico seated correctly ✔
- Thonny interpreter set ✔
- LED blink observed ✔

See you in Session 2!