Lesson 1

Programming the LED Worksheet

**Programming the LED WorkSheet Lesson\_1**

In this activity you will set up the onboard LED and learn how to turn it on and off creating a blinking effect.

**You will need the following equipment:**

* Raspberry Pi Pico microcontroller
* Micro USB cable

The Pico has an onboard LED, on the **Pico** the LED is on **Pin 25**. This pin can be turned on and off by allowing a current to pass to the Pin by changing the Pin value to 1.

Input the code below, pay careful attention to the case of the text Pin and pin or not the same. **Note: using Pico w change the 25 to “LED” in line 4**

A computer screen shot of text

Description automatically generated

















A screenshot of a computer error

Description automatically generated





Change the sleep from 1 to 0.5 on line 10 and 12. Execute the new version of your code.

**What is the effect of change?**

**Now** try amending your code to make use of the toggle method as shown below and execute the code.

A screenshot of a computer

Description automatically generated

**What does the toggle method do?**

**Morse code** is a method of encoding text characters using sequences of dots and dashes to represent letters, numbers, or other symbols. It was developed by Samuel Morse and Alfred Vail in the early 1830s as a way to transmit messages using telegraph systems.

**Dots (·) represent short signals.**

**Dashes (–) represent longer signals.**

In Morse code each letter of the alphabet, as well as numbers and some punctuation marks, is assigned a unique combination of dots and dashes. Morse code can be transmitted using sound, light, or other signals. It's a simple and efficient way to communicate messages using a binary system of short and long signals.

Morse code is still used today in various contexts, such as amateur radio, aviation.

**Challenge:** Can you create the signal for the Morse code SOS distress signal? 3 long flashes, 3 short flashes 3 long flashes

**Challenge:** Can you edit your code to flash the LED with the letters in your name using Morse code?

