

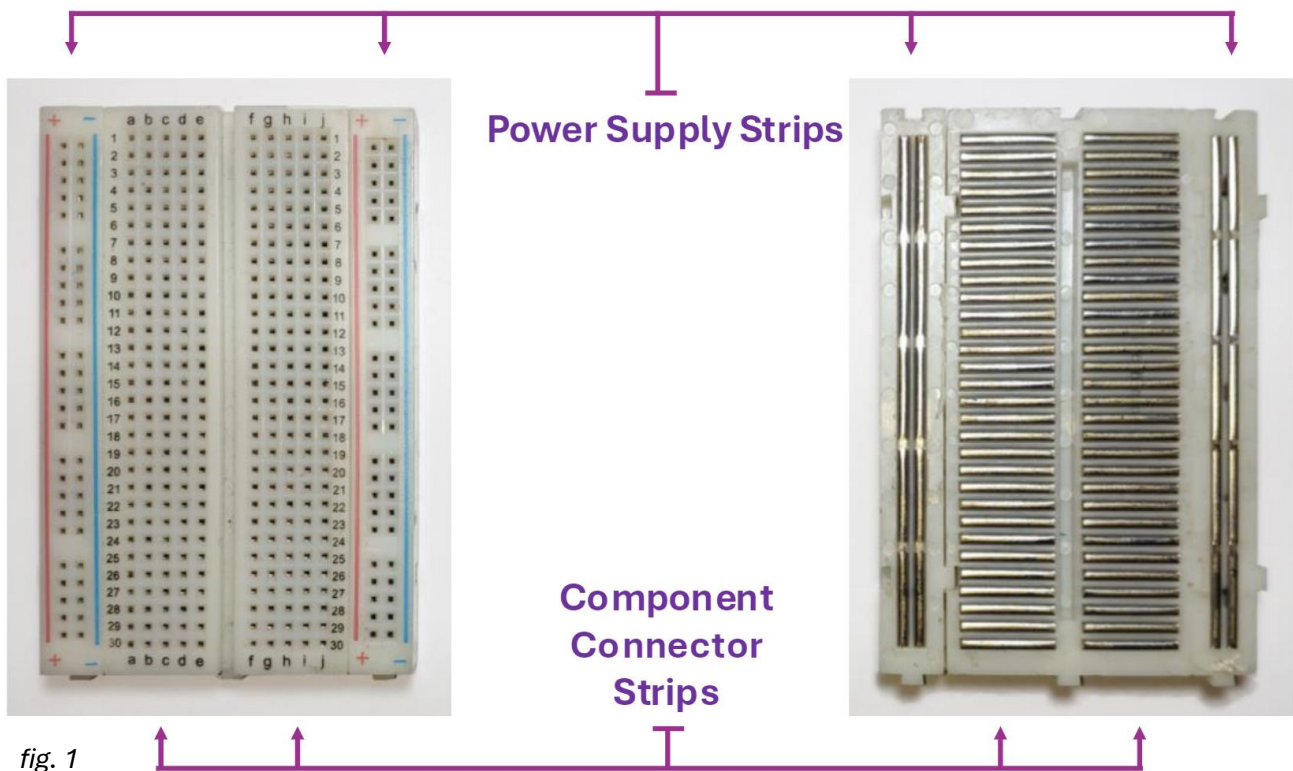
01

FUNGI KIT

Wiring Guide

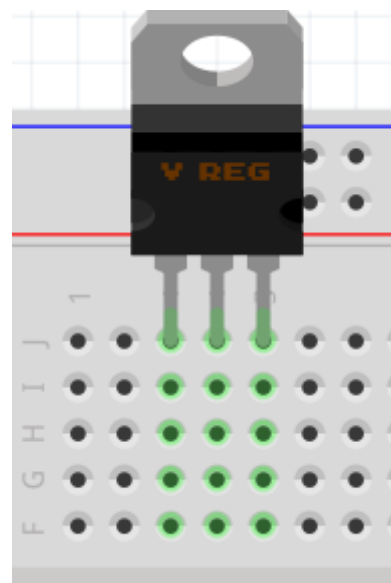
Breadboard Connection Guide

- ⇒ To build your prototype you will be using a **solderless breadboard**.
- ⇒ Breadboards look like a grid of holes. Underneath the surface, metal strips connect the holes in a set pattern (fig. 1). Each row of 5 holes, called Component Connector Strips, is connected underneath. Power Supply strips run vertically along the sides.
- ⇒ If you plug both pins of a component into the same row, they become joined to the same connection — so no current flows. To make the circuit work, place each pin in a **different row** so electricity can pass through.



- ⇒ Note how the regulator's pins in fig. 2 are lined up **horizontally**, fitting in rows 3, 4, 5 within row J.

We will use a **jumper cable** to connect the regulator later.



Step 1: Installing Power Connections

🔌 In your kits you will have received a breadboard with a **Raspberry Pi Pico** and a **5V Voltage Regulator** already inserted. You need to connect these as shown below (fig. 3)

🔌 A **voltage regulator** is a small electronic part that makes sure devices get a steady and safe amount of electricity. Different devices need different voltages to work properly. For example, the Raspberry Pi Pico needs between **1.8 and 5.5 volts** to run safely.

🔌 If we connect a **9-volt battery** straight to the Pico, it will give too much power and could **damage** the board. A **5-volt voltage regulator** takes the 9 volts from the battery and **reduces** it to **5 volts**. This way, the Pico gets the right amount of power to work properly without overheating or breaking.

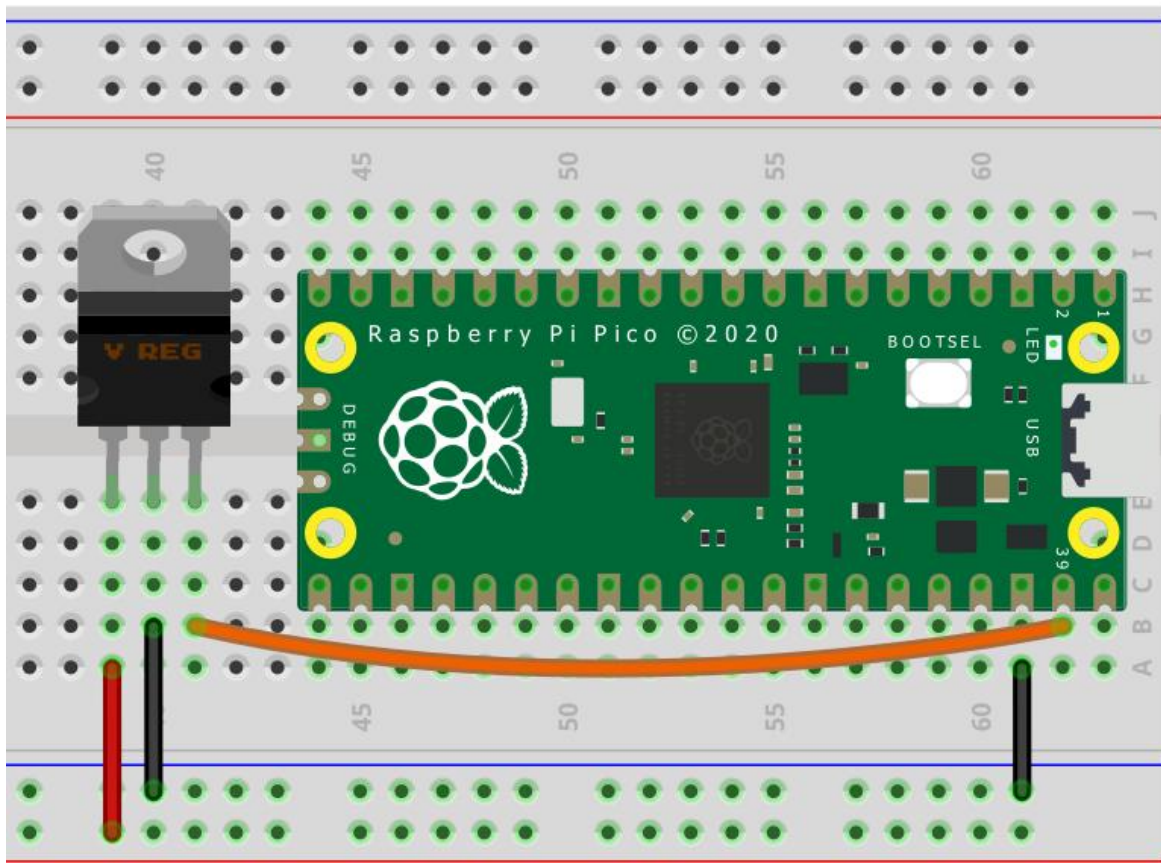


fig. 3

🔌 **Note:** The cable colours don't affect how the circuit works, but following the suggested colour scheme makes it easier to check your connections if you have the right cables available.

Step 2: Connecting the Analogue-to-Digital Converter (ADC)

- Connect the **Red, Black, Green, and Blue** wires from the analogue-to-digital converter (ADC) as shown below (fig. 4).
- On the **analogue-to-digital converter (ADC)** connect four **different coloured** jumper cables to the **A0, A1, A2, and A3** pins in the **A column** (the column of blue pins). Ignore the **+** and **-** columns.
- An **analogue to digital converter (ADC)** changes real-world signals into numbers the Raspberry Pi Pico can understand. In this project, it's used to measure the tiny electrical signals produced by fungi.

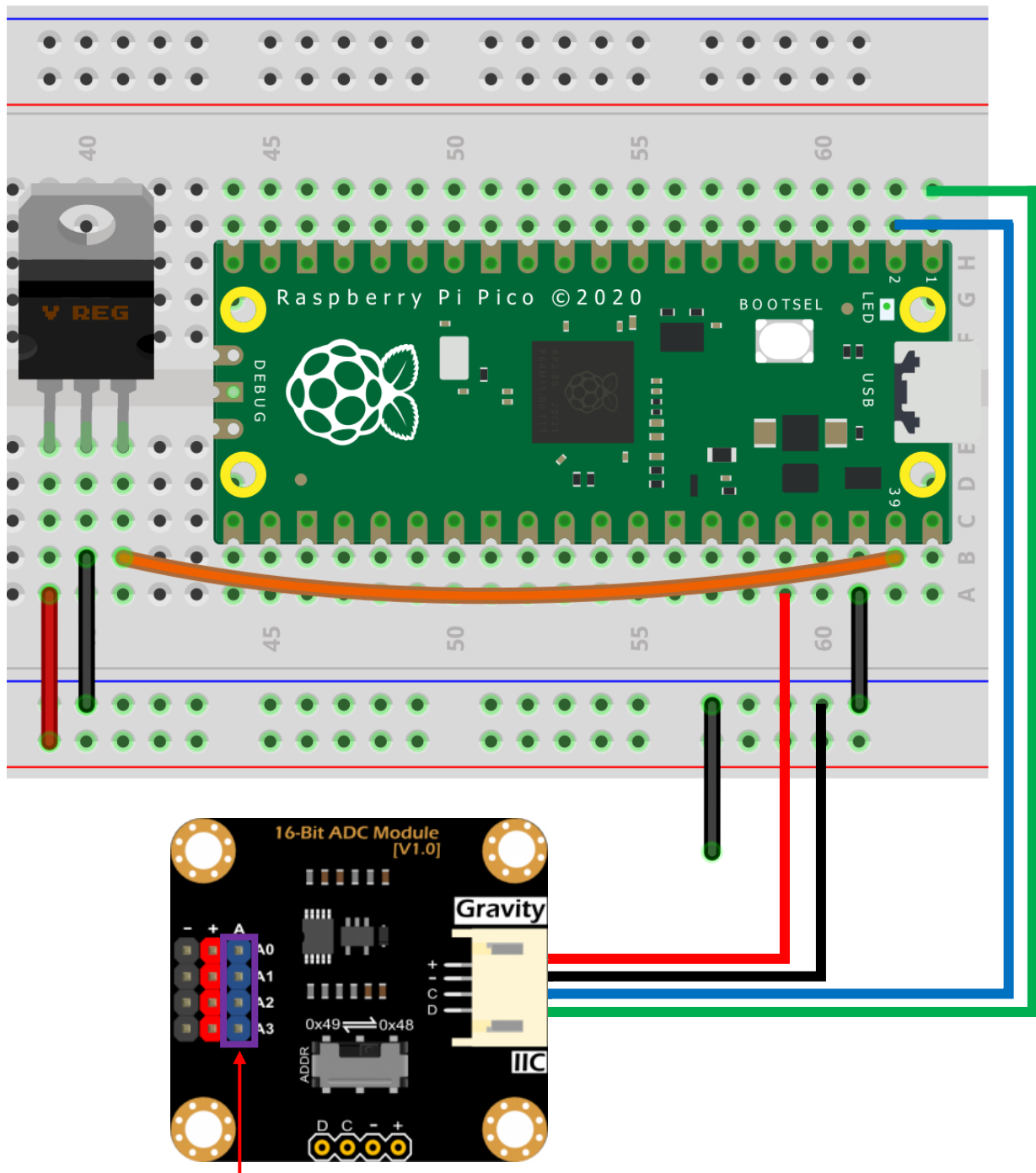


fig. 4

Step 3: Circuit inspection

- ⇒ Now that you have finished wiring your circuit double check your work then ask one of the UQ staff to inspect your circuit.
- ⇒ Once your circuit passes inspection you will be given a download cable, and you can move on to the programming.