

ROBOTICS GET UNSTUCK WALL

TRY 3 BEFORE ASKING ME!

Follow these steps to troubleshoot your robotics project:

Identify the Problem

Define the Issue:

Clearly state what's not working as expected. Is the robot not moving? Not responding to sensors? Take a moment to observe what's happening.



Check Micro:bit Connection

Pairing Check:

Is the micro:bit connected to your MacBook? Look for it in the Finder window.

Power Indicator:

Check for a **RED** light on the micro:bit board.

Alternative Test:

Try connecting it to your partner's computer or use a different micro:bit to rule out device issues.



Check Power Supply

Battery Charge Check:

Use the multimeter to measure the battery voltage. Connect the probes to the battery terminals and ensure the reading is above the marked value.

Solution if Low:

Recharge or replace the battery.

Connection Check:

Ensure the battery is securely connected to the motor board.



Inspect Connections

Micro:bit Placement:

Make sure the micro:bit is firmly slotted into the robot car.

Sensor Alignment:

Confirm the line sensor faces forward and the ultrasonic sensor is positioned correctly.



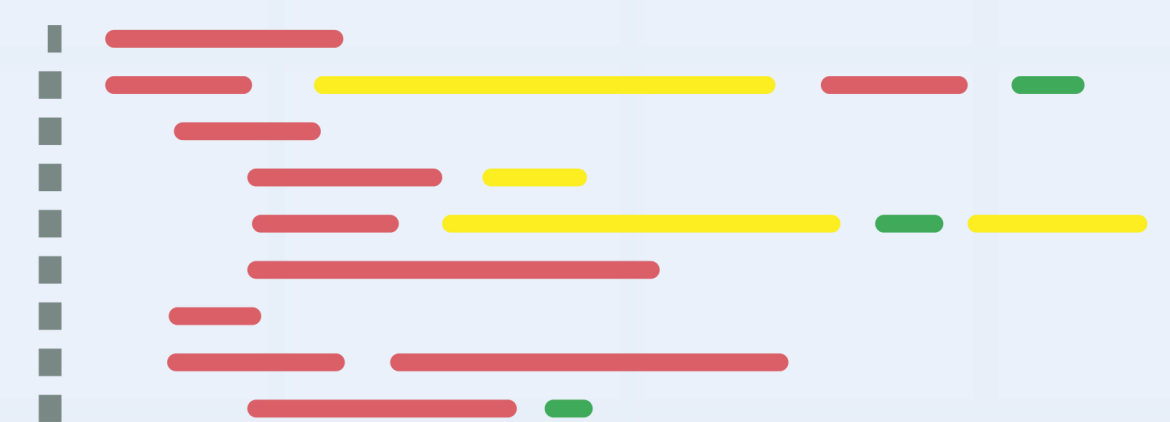
Review Your Code Thoroughly

Line-by-Line Check:

Carefully review each line of your MakeCode program, ensuring it matches the tutorial.

Understanding Code:

Can you explain each part? Adjust values like speed or distance to see if they affect performance.



Test Sensors Individually

Isolate Sensor Tests:

Run simple code snippets to test each sensor's functionality without involving the motors.

Show Sensor Readings:

Display sensor values on the micro:bit screen to confirm they work correctly.

Simplify the Code

Test Basic Functions First:

Take out any complicated parts of your code for now. Try testing simple actions like moving forward or turning to see if these basic functions work correctly. This can help you find where the problem might be.



Check for Environmental Interferences

Ultrasonic Sensor Placement:

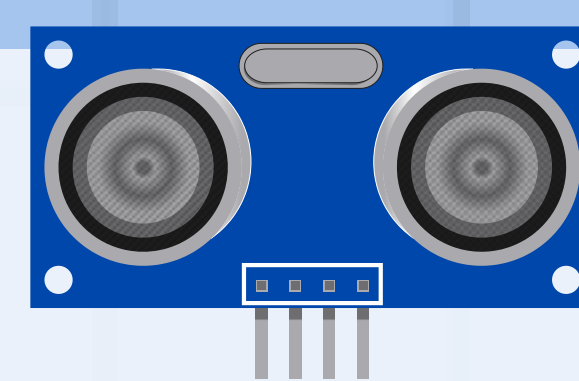
Make sure no objects are too close, which could interfere with sensor readings.

Radio Frequency:

If using a radio signal, confirm both micro:bits use the same unique frequency.

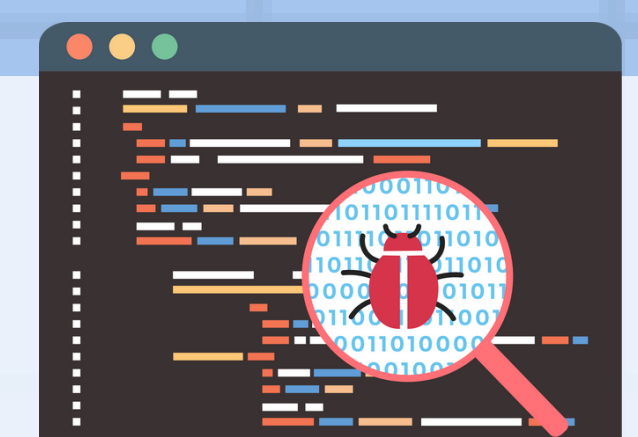
Line Sensor Contrast:

Ensure the line color contrasts strongly against the background for accurate tracking.



Use Debugging Tools in MakeCode

Variable Output: Use "show number" or "show string" to display sensor readings and important variable values on the micro:bit screen, helping you identify unexpected results.



Consult Available Resources

Online Resources: Check bit.ly/vsadesign for more guidance.

Research the Issue: Search online or consult AI assistance if possible.

Tips for Effective Problem-Solving

- **Systematic Approach:**

Change one part at a time to isolate the problem.

- **Stay Patient and Persistent:**

Troubleshooting is a valuable skill, so keep going!

- **Celebrate Small Wins:** Each small success is progress!