

Traffic Light Reaction Game

60 minutes (2 periods)

Intermediate Robotics & Engineering

WHAT THIS LESSON DOES

In this step-by-step lesson, you'll create a fun traffic light reaction game using your micro:bit and STOP:bit Traffic Lights. You'll learn to program the lights, create variables, and measure reaction times. By the end, you'll have a game that challenges you and your friends to react as quickly as possible when the light turns green.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop understanding of micro:bit and STOP:bit Traffic Lights for creating a reaction game.
- Learn to add and utilise the "stopbit" extension in the MakeCode toolbox.
- Understand and apply the concept of variables to measure reaction time.
- Develop skills to program micro:bit buttons for specific actions.
- Learn to display data on the micro:bit's LED matrix and interpret the results.

BEFORE THE BELL

- Prepare to guide students in creating a traffic light reaction game using a micro:bit and STOP:bit Traffic Lights. Ensure students understand how to attach the traffic lights to the micro:bit, create a new project on MakeCode, and add the "stopbit" extension. Explain the purpose of the 'startTime', 'endTime', and 'reactionTime' variables. Walk them through the process of setting up the code for button A and B presses, displaying the reaction time, and testing the game. Encourage students to challenge their peers and improve their reaction times.

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HOW THE LESSON RUNS	
Create a New Project	
Add the Stopbit extension	
Create the Variables	
Button A Pressed	
Button B Pressed	
Display Reaction Time	
Test Your Game	
Challenge Your Friends	