



Remote Control

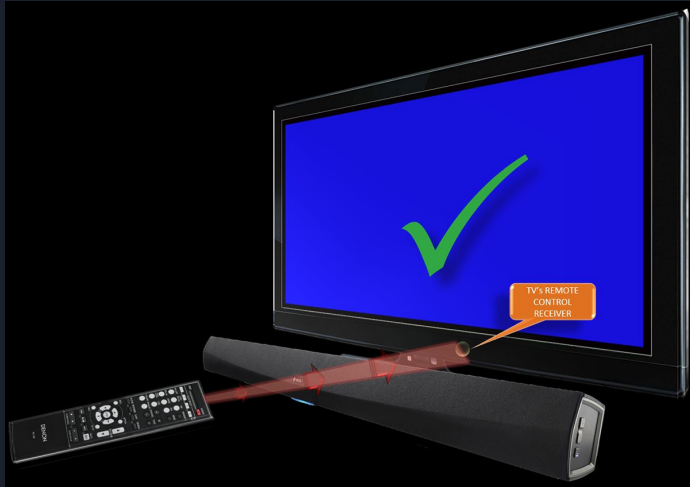
Robotics Curriculum
IT Adventures



Lesson Overview

- Learn how to use additional littleBit sensors
- Learn how to interact with remote sensors and the littleBit's latch
- Create programs that interact with external signals and can toggle behavior

Remote Trigger

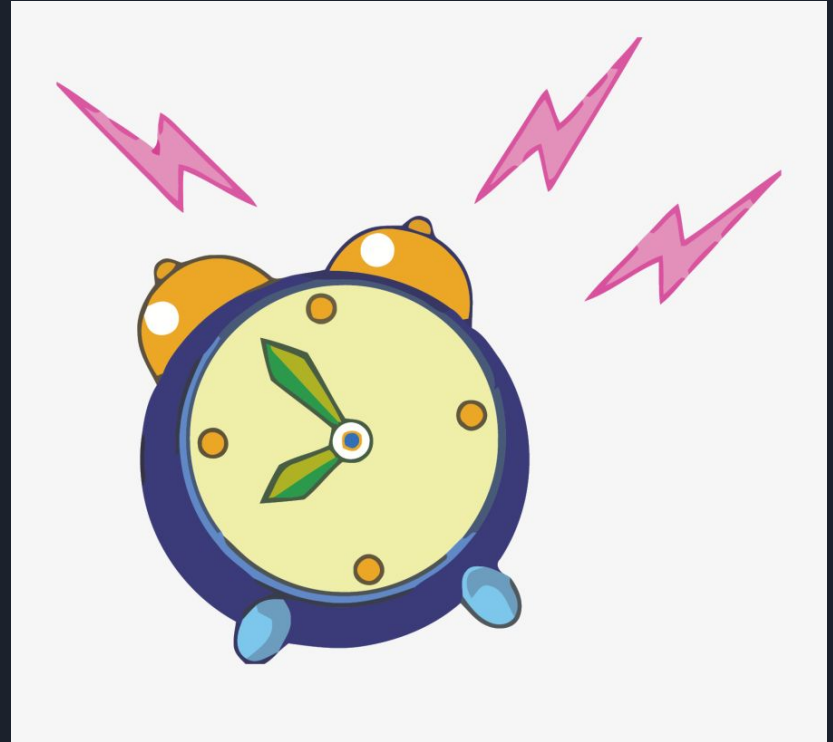


Remote control input is really the same as any other digital input that you have learned so far. The only thing to keep in mind is that it is remote! In the case of the RVR, your littleBits topper kit came with a remote trigger. Almost any remote control (any that uses an infrared light, like a TV remote or projector remote) should cause the trigger to activate. This is then treated as a digital input by the micro:bit. Try making a program to display a smiley face when the sensor detects a signal!

Latches

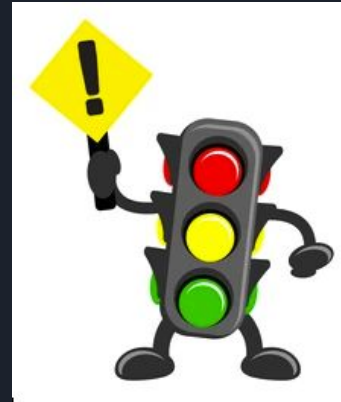
Latches are a simple way make it so we don't have to constantly apply a signal, essentially storing the signal. Our latch doesn't actually store the signal, but toggles on and off when it receives a signal.

Try hooking up a remote trigger and the buzzer together (make sure your micro:bit is connected to power and the remote trigger is on an output port). No coding is needed for this experiment. Press your remote to make the buzzer sound. When does the sound start and stop? Now put the latch component in between them. How does the latch change the behavior?



Primary Learning Challenge: Red light, green light

Write a program where the RVR will run when the latch is set to HIGH. The latch should be controlled by the remote trigger. Pressing a button on the remote control should turn it on, and pressing it again should turn it off. Use this program and circuit to play a game of red light green light! How far away can your sensor still work?



Secondary Learning Challenge: Travelling catapult

Combine the servo from Lesson 9 with the remote trigger to drive up to a target and launch a ball, stopping and throwing when a button is pressed on the remote (what analog value will throw the ball the furthest?). Build a wall to destroy and break through! Can you get your RVR to start when the remote is pressed, stop and fire when pressed again, and then start a cycle of lowering the servo for reloading when pressed and firing when pressed again?

