

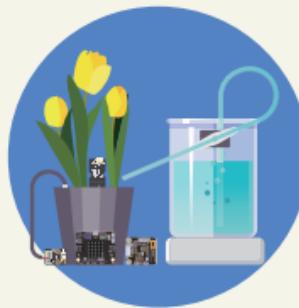
Gravity IoT Starter Kit for micro:bit

| Quickstart Guide |



What is OBLOQ ?

OBLOQ is an extension module that allows micro:bit to connect to a Wi-Fi network. With MakeCode block editor, even a beginner can setup the connection to then send and receive data via EasyIoT platform.



Electronic Device

Link



Micro:bit

Link



OBLOQ Module

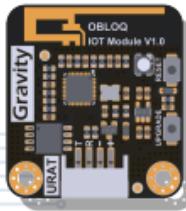
WIFI



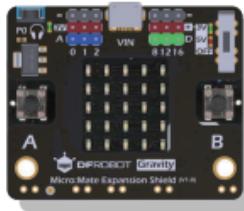
Internet

GET READY!

To start your first IoT project, you will need the following things



OBLOQ Module



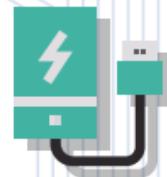
micro:bit + Micro:Mate
expansion shield



Gravity Module



A Computer with
USB port and
internet connection.



USB power bank as
external power supply
(optional)

Now, we will walk you through the process to setup connection between a micro:bit and a web browser on your smart device.

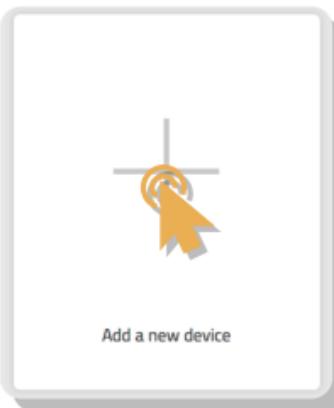
SIGN IN EASYIOT

Register your device on EasyIoT dashboard

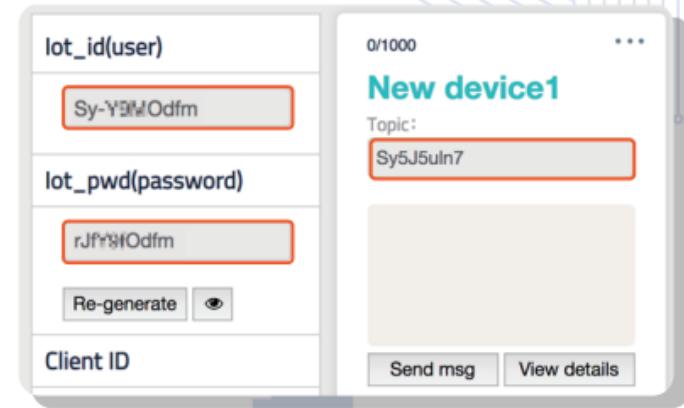
1



2



3



Visit <http://iot.dfrobot.com/>, create an account and login.

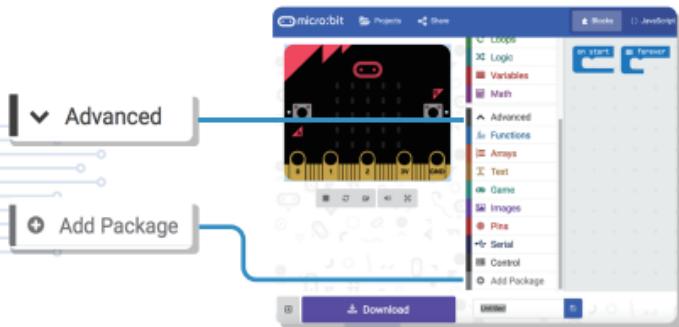
Go to "workshop" and add a new device.

Take down "lot_id", "lot_pwd" and "topic" for future steps.

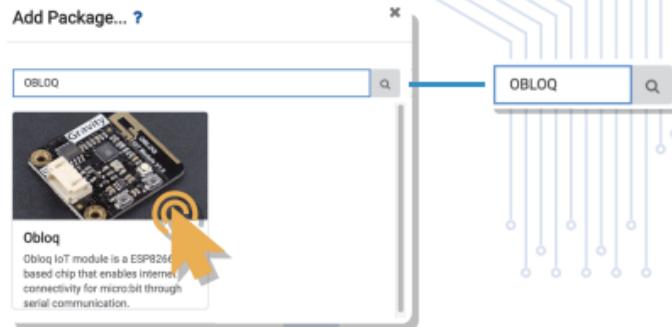
OPEN MAKECODE EDITOR

Add OBLOQ module to the block list

1



2



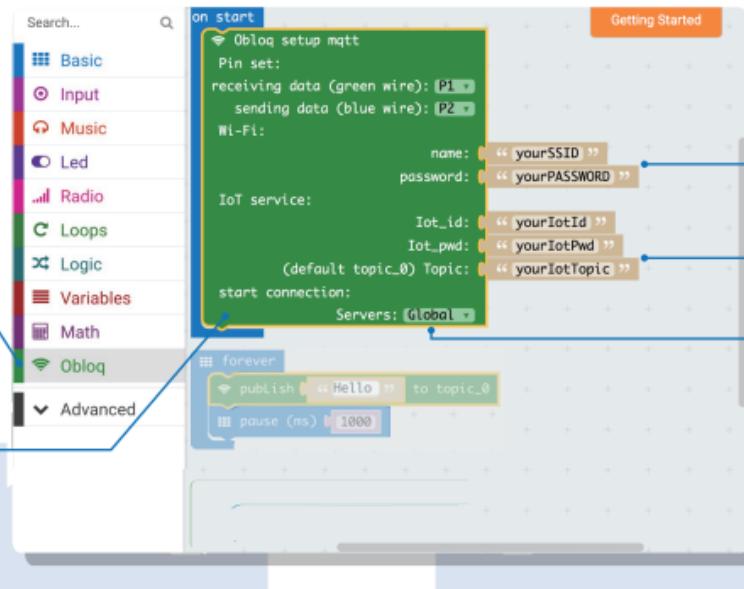
Visit makecode.microbit.org/v0 to open the online block editor.
Click "Add Package" under "Advanced".

Search for "OBLOQ" and add it to the block list.

START PROGRAMMING

Configure network connection

- 1 Click "Obloq" to expend the block list
- 2 Drag "Obloq setup mqtt" into the "on start" loop.



Fill in Wi-Fi name
and password

Fill in Iot_id, Iot_pwd
and topic code

Select "Global" server

3

4

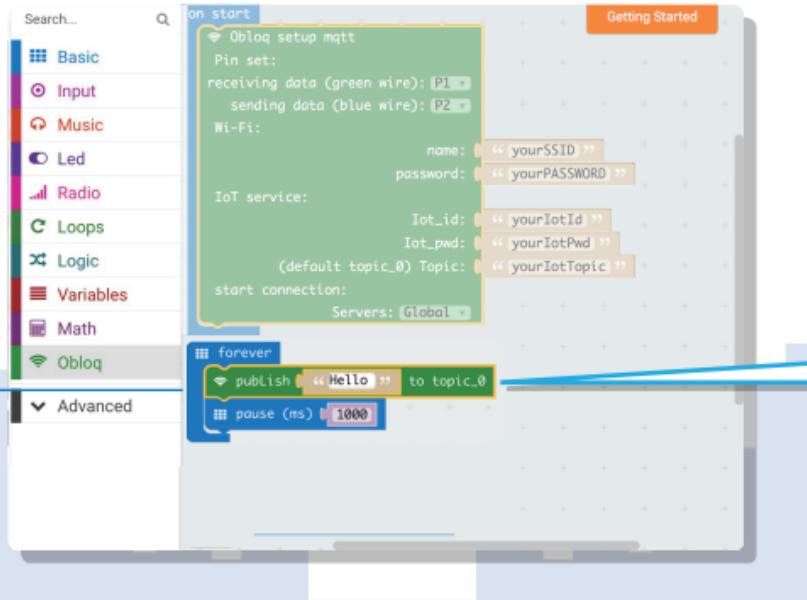
5

SAY HELLO TO EASYIOT

Send message “Hello” to EasyIoT in every 1 second.

The “publish” block sends out a message “Hello” to devices registered at topic_0.

Meanwhile, it will be displayed and recorded on EasyIoT platform.



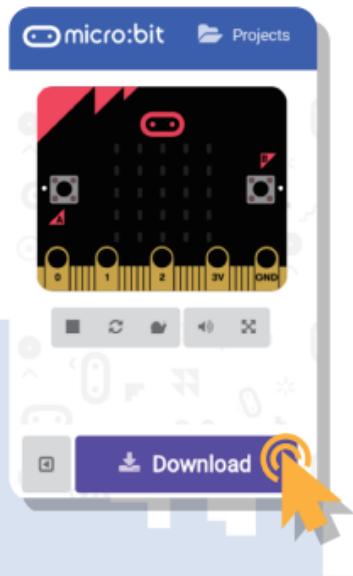
Latest news	
Time	Message
2018/12/7 17:7:17	Hello
2018/12/7 17:7:16	Hello
2018/12/7 17:7:15	Hello
2018/12/7 17:7:14	Hello
2018/12/7 17:7:13	Hello

The message “Hello” will eventually show up on EasyIoT dash board for every 1 second.

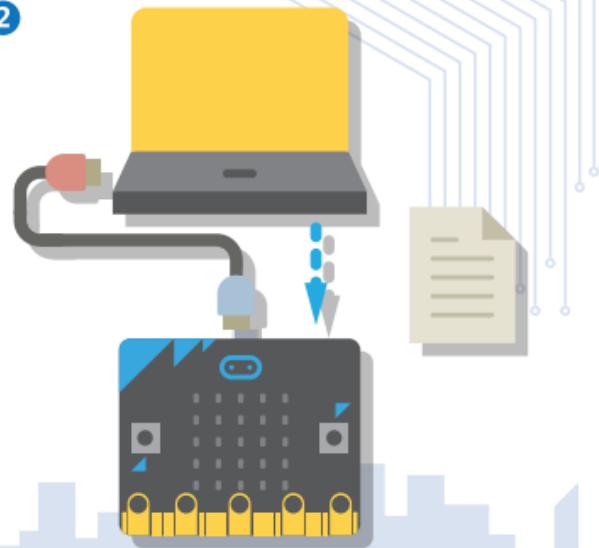
BURN CODE

Connect micro:bit to your computer and move the .hex file to MICROBIT drive

①



②

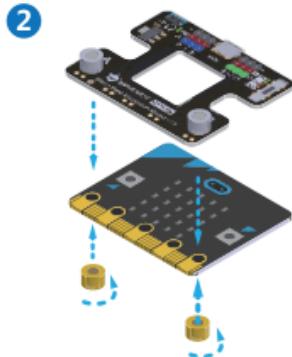


WIRE UP

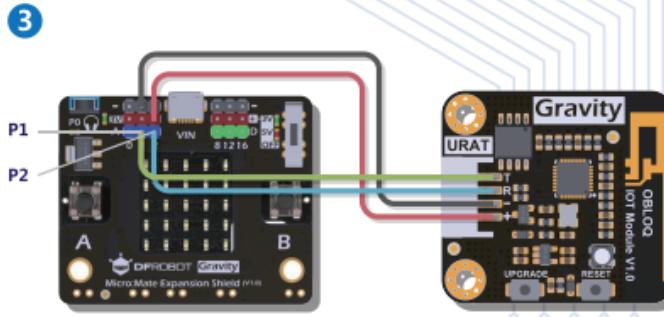
Connect the circuit and switch on power



To prevent short circuit,
unplug the USB cable from
micro:bit



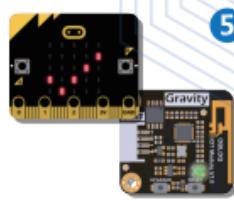
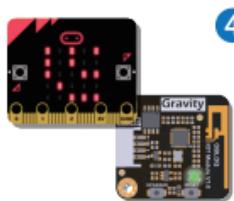
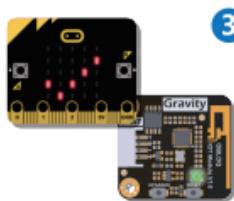
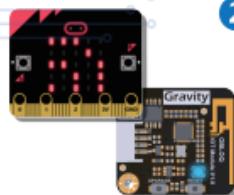
Install Micro:Mate expansion
board onto micro:bit (make
sure the screws are securely
tightened)



Connect the circuit

- Power cable (red) ————— Red pin
- Ground cable (black) ————— Black pin
- TX (Green) ————— P1 pin
- RX (Blue) ————— P2 pin

START CONNECTION



Connection Problem Diagnosis

1. Check your Wi-Fi name and password.
2. Make sure the wires are correctly and securely connected.
3. Power up the device from the MicroUSB port of the Micro:Mate expansion board.

1000/1000
New device1
Topic: B1mT9fSRX

Hello
2018/12/6 15:14:10

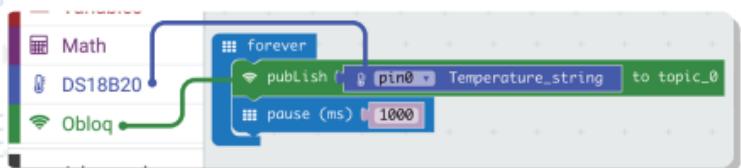
Send msg View details

When successfully connected, the message "Hello" will show up on the EasyIoT dash board.

MORE APPLICATIONS

Sample 1: Publish temperature data to EasyIoT

- Program

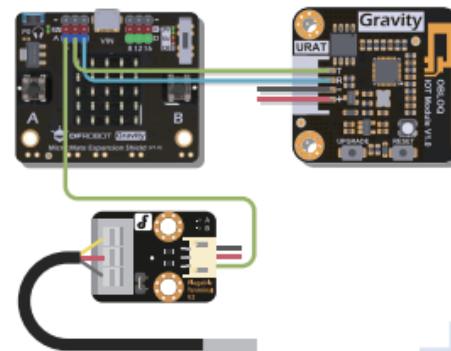


Add Package... ?

github.com/DFRobot/pxt-ds18b20

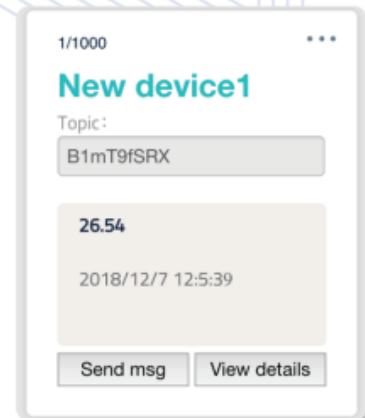
Note: to use water-proof temperature sensor, you will need to add following package to MakeCode Editor.
github.com/DFRobot/pxt-ds18b20

- Wiring Diagram



Power cable (red) — Red pin
Ground cable (black) — Black pin
TX (Green) — P1 pin
RX (Blue) — P2 pin

- Result

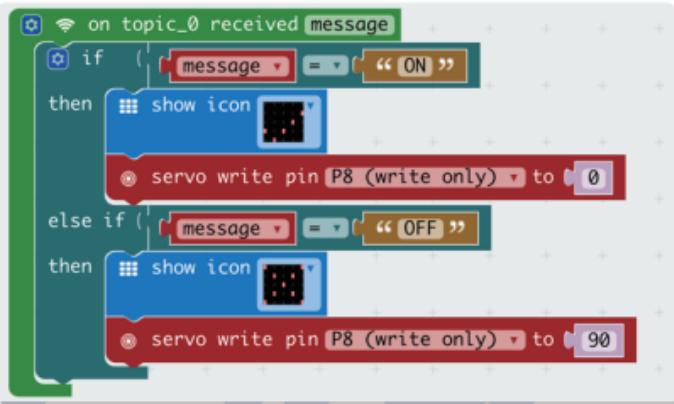


Temperature data will be updated to EasyIoT in every second.

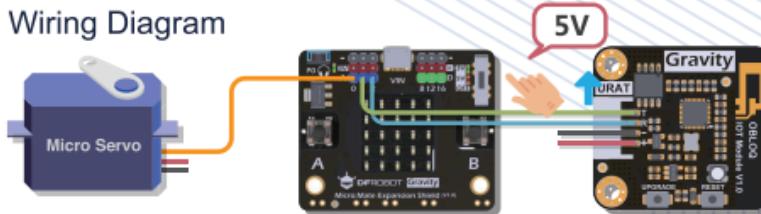
MORE APPLICATIONS

Sample 2: Control a servo via EasyIoT

- Program



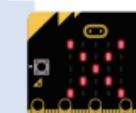
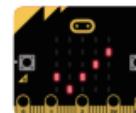
- Wiring Diagram



Note: Servo only works under 5V.

Put the switch on middle to set P8, P12, P16 to 5V (LED turns red)

- Result



Control the servo by sending "ON" and "OFF" from EasyIoT



We are all set!

Now, add more Gravity modules to your project to bring IoT into your real life.

To learn more about this kit and Gravity series modules, go to DFRobot.com and search for their name or SKU number.

