

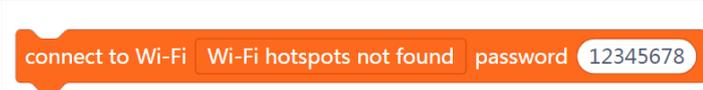
Lesson 1 Codey Rocky & Weather Reporter Panda

Learning Objectives:

1. Understand what IoT is.
2. Know how to connect Codey Rocky to online climate database.
3. Able to turn the sprite panda into a weather reporter.

1. What is IoT?

IoT(Internet of Things) refers to a wireless network of items. For instance, through wireless network, Codey can connect to observatories to access real-time weather conditions. The following table includes some newly added **IoT** extension blocks of Codey Rocky. Let's take at a look at how they work.

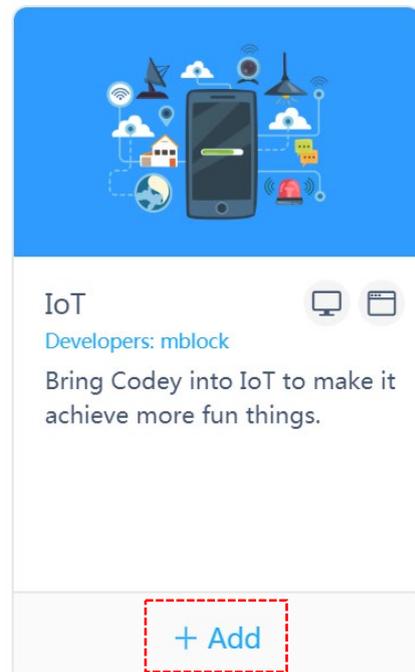
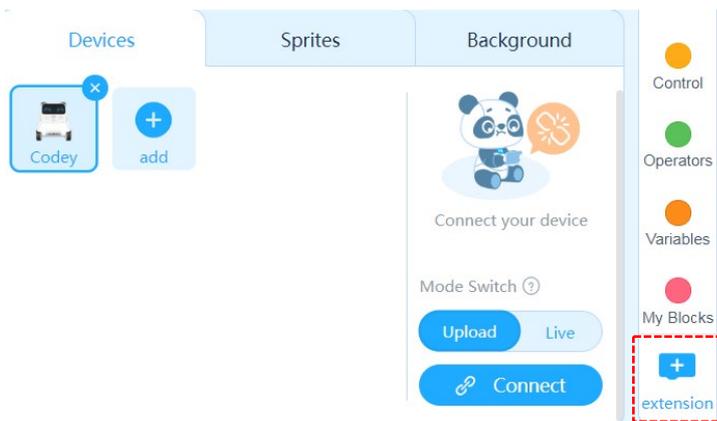
IoT	Blocks	Function
Network		Connect Codey Rocky to a selected Wi-Fi network
		Determine whether Wi-Fi is connected or not. The result could be: (1) true: Wi-Fi already connected; (2) false: Wi-Fi not connected.

Real-time data		Send back the weather-related data of the selected location, including the highest/lowest temperature (Celsius/Fahrenheit), weather condition and humidity level.
		Send back the air quality index of the selected location.
		Send back the sunrise or sunset time of the selected location.

Challenge 1 Sign in to mBlock

Before using the **IoT extension** blocks, you need to sign in to mBlock 5 first.

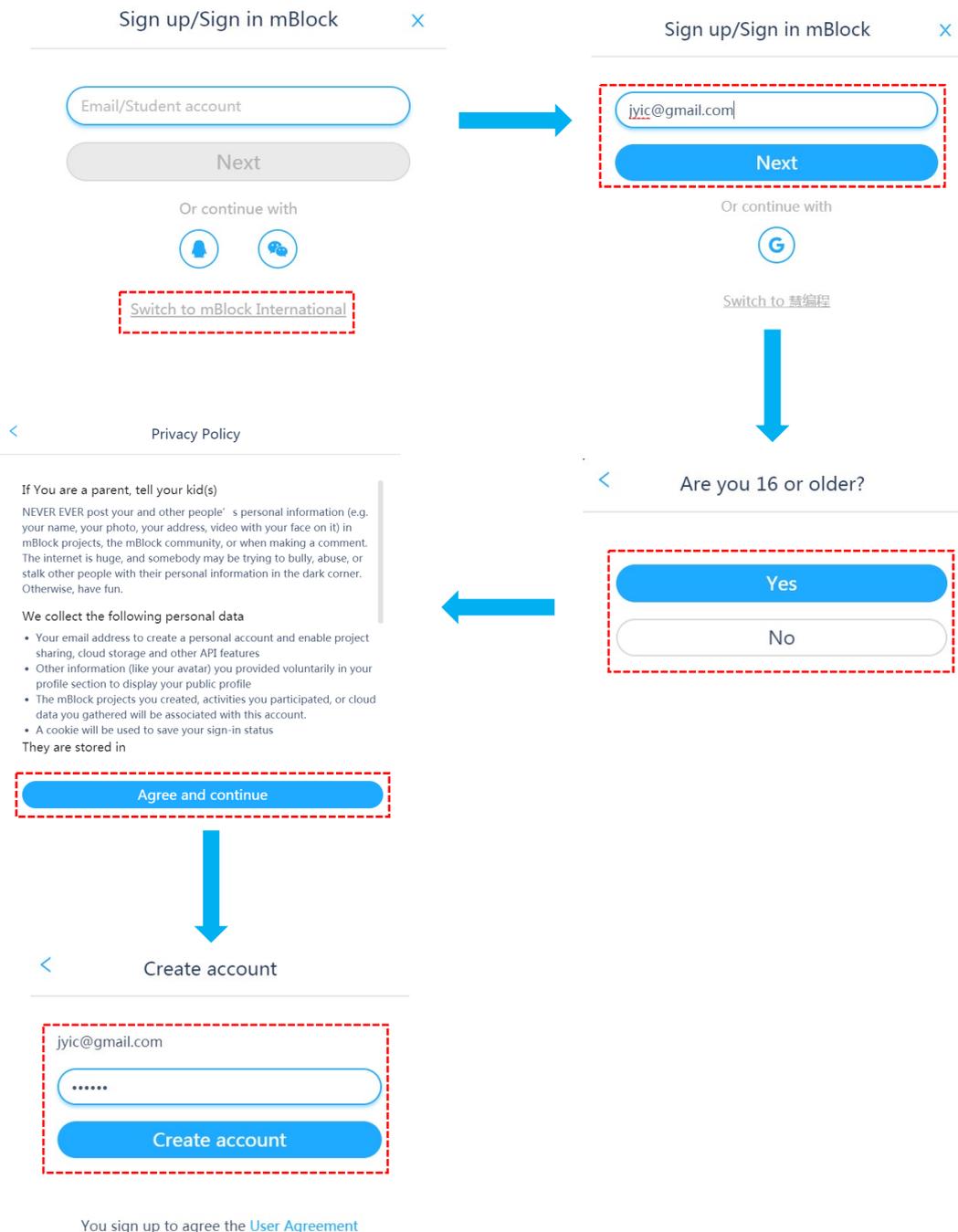
Step 1 Select  and click the button  to add the **IoT extension** from the **Extension Center**.



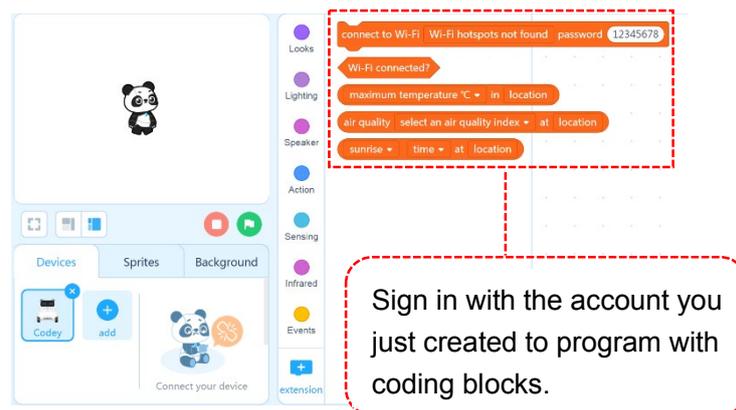
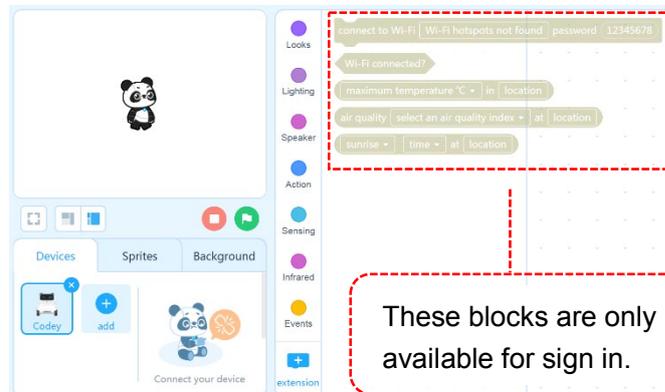
Step 2 Click the  icon on the upper right corner to create an account.

Step 3 Click **Switch to mBlock International** and enter your email address to create an account.

Step 4 Enter your password and click **Create account**.



Step5 You successfully create an account and the icon changes to



Challenge 2 Connect Codey Rocky to network(Example 1)

Enable your Wi-Fi network. When the button A on **Codey Rocky** is pressed, the robot starts connecting to network: when connection is successful, the LED screen displays "Y", otherwise the screen displays "N".

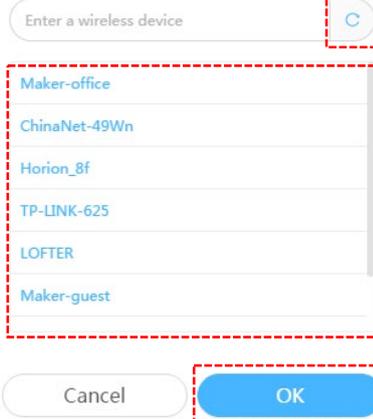
Step 1 Drag the following blocks to the Scripts area. Select a **Wi-Fi network** from the drop-down menu and click **OK**.

Step 2 Enter the **Wi-Fi password**.

when Codey starts up

connect to Wi-Fi Wi-Fi hotspots not found password 12345678

Wireless



Rearrange all the Wi-Fi network names in the list.

Wi-Fi names

Step 3 Put the following blocks together as shown. Connect Codey Rocky to your computer and click **Connect**. After connection, click **Upload** to upload the programs to Codey Rocky.

when button A is pressed

connect to Wi-Fi Wi-Fi hotspots not found password 12345678

if Wi-Fi connected? then

show Y until scroll done

else

show N until scroll done

Step 4 Press the button **A** on Codey to see what it displays on its LED screen:

1. Y 2. N

TIPS:

If Codey displays the word "N", please ensure the Wi-Fi network itself works well and the password is correct.

2. Strings Operation: Codey Reports Beijing's Highest Temperature

The **Operators** blocks not only perform mathematical operations on numbers but can also join strings or report the length of strings.

Operation	Blocks	Function
Join		Join the first string "hello" with the second string "world" to combine these two into "hello world".
Extract		Report a specified character (the first letter) of the string -"world".
Length		Report the length of a specified string (world).
Determine		Determine whether the first string(hello) contains the second string (world).

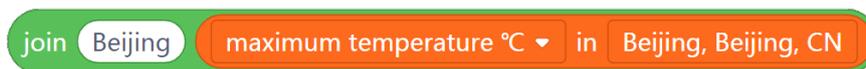
Challenge 3 Codey Rocky reports weather (Example)

When Codey connects to a Wi-Fi network, it is able to report the highest temperature of Beijing and repeatedly display the text maximum temperature in Beijing on its LED screen.

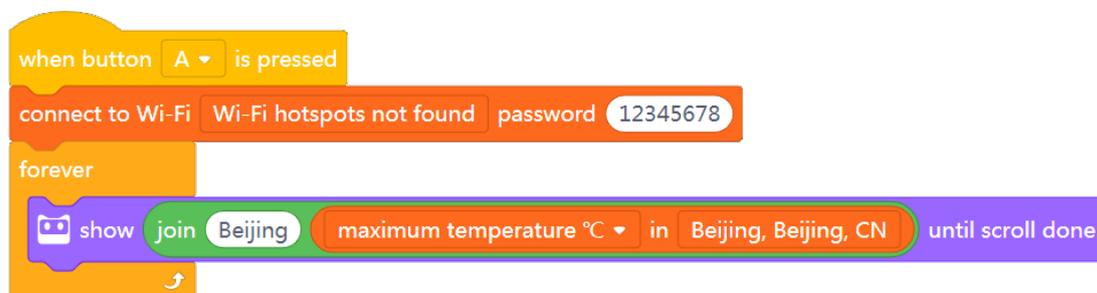
Step 1 Drag the block  to the Scripts area and enter "Beijing" in the location. Click **OK**.



Step 2 Drag the block `join hello world` to the scripts area. Enter "Beijing" in the first slot. Place the block **maximum temperature in Beijing** in the second slot as shown below.



Step 3 Arrange coding blocks as shown below to repeatedly display Beijing's maximum temperature on Codey's LED screen.



Step 4 Select **Connect->Upload** to see if Beijing's maximum temperature repeatedly appears on Codey's LED screen.