



All About Lights

Lesson 3

Tasks in this lesson

- ❑ Recall the Input function
- ❑ Understand the Output function
- ❑ Explore the use of Light Sensor



Warm Up



Your Chat Bot Project

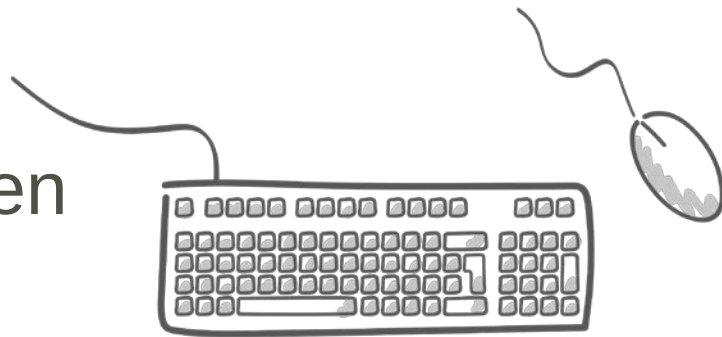
- How did you make the bot talk?
(Tip: The speech/thought bubble)
- What kind of script did you use to develop the interactive chatting effect?

Phase 1

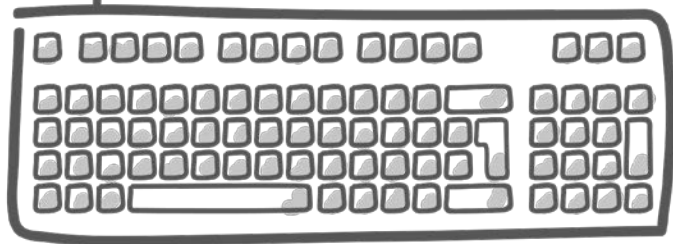


Task 1 The Inputs You Know

- How many input programming scripts have you learnt?
- What are the inputs from when you execute the scripts?



makeblock



ask What's your name? and wait

when space ▼ key pressed

key space ▼ pressed?



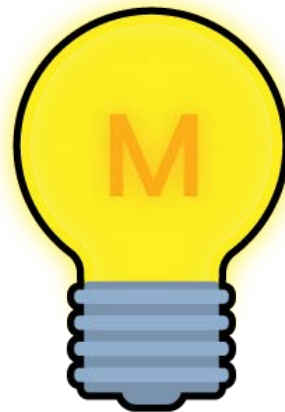
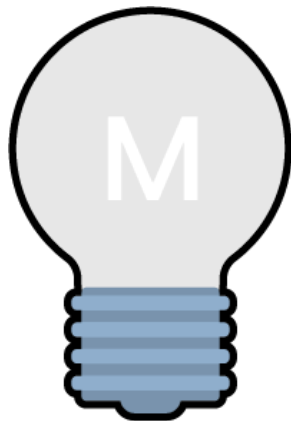
when clicked

when this sprite clicked

mouse down?

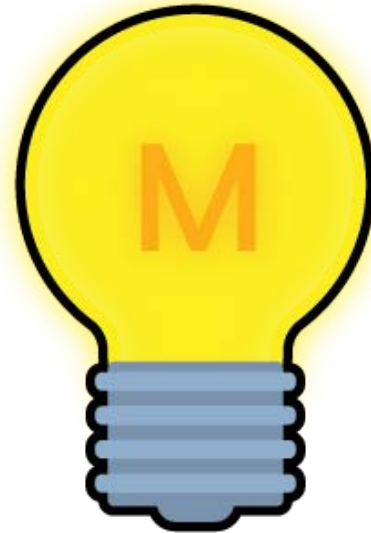
Events

- An event is an action that can cause things to happen.



Events

- The action of pressing the button is an “**Event**”.



Events

- Press a button to turn on the light
- Click on the Green Flag or a sprite
- Press the space key on the keyboard



Events Blocks

when  clicked

when key pressed

when this sprite clicked

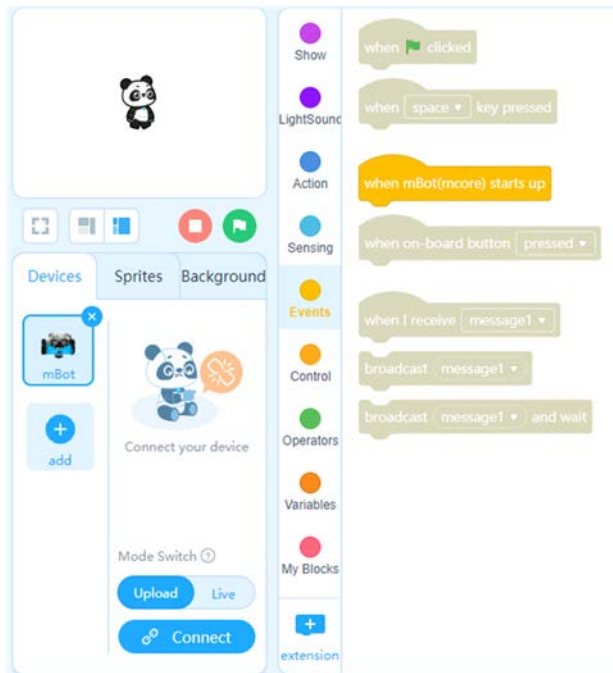
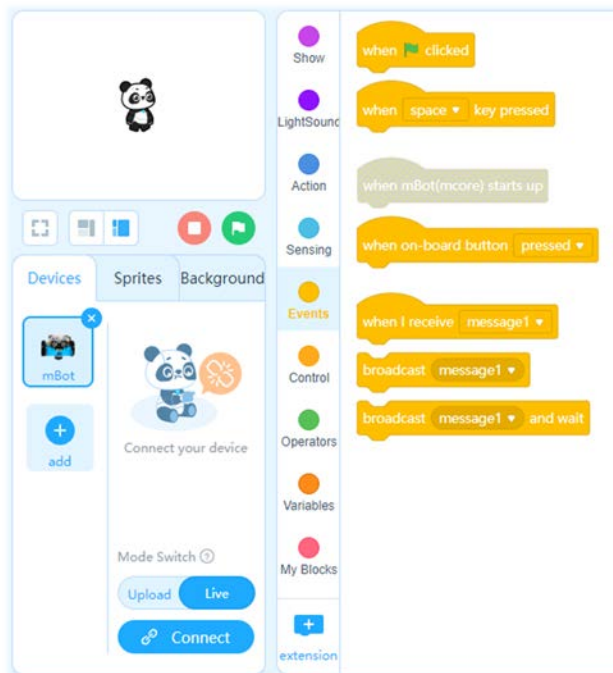
when on-board button

when backdrop switches to

Phase 2



Events Blocks for mBot



Events Scripts for mBot

- Any difference?
- How to switch the two panels?

makeblock

when clicked

when space key pressed

when mBot(mcore) starts up

when on-board button pressed

when I receive message1

broadcast message1

broadcast message1 and wait

Mode Switch

Upload Live

Connect

when clicked

when space key pressed

when mBot(mcore) starts up

when on-board button pressed

when I receive message1

broadcast message1

broadcast message1 and wait

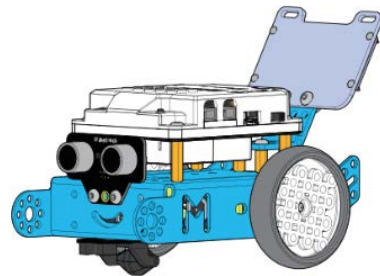
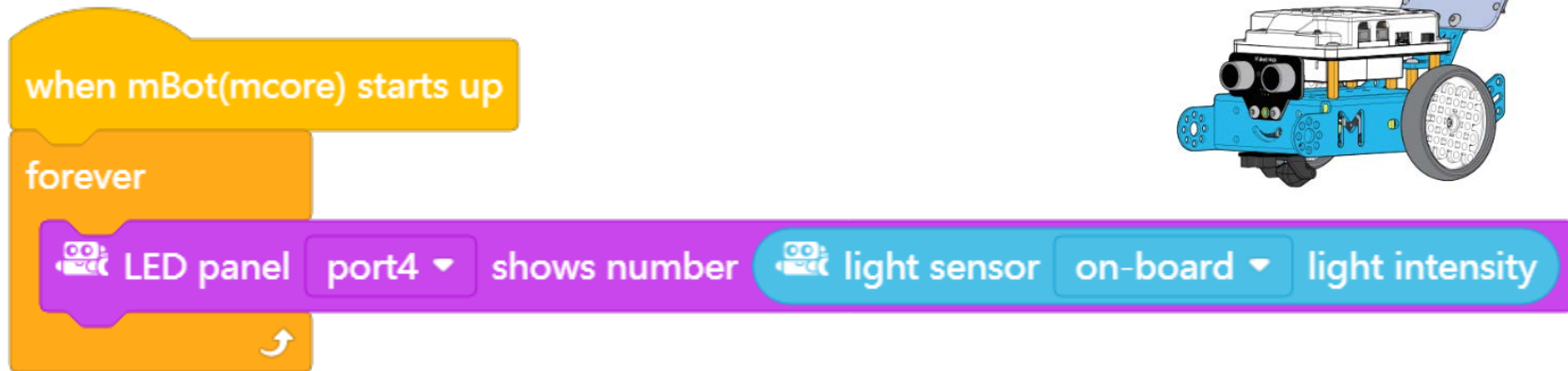
Mode Switch

Upload Live

Connect

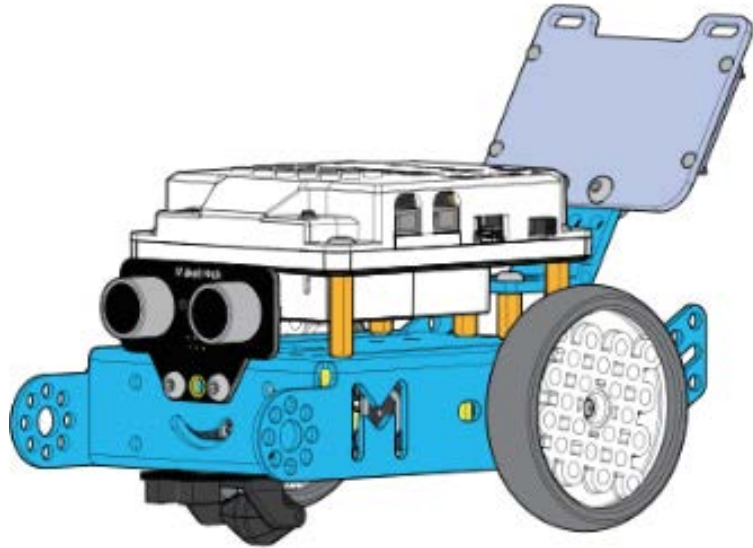
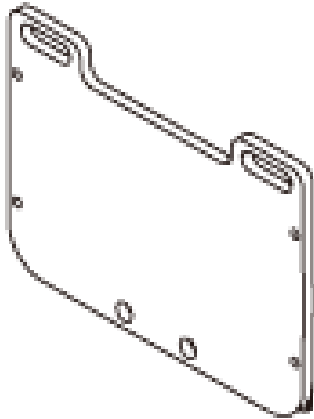
Task 2 Upload the Program

- Model and upload the demo program below into your mBot:



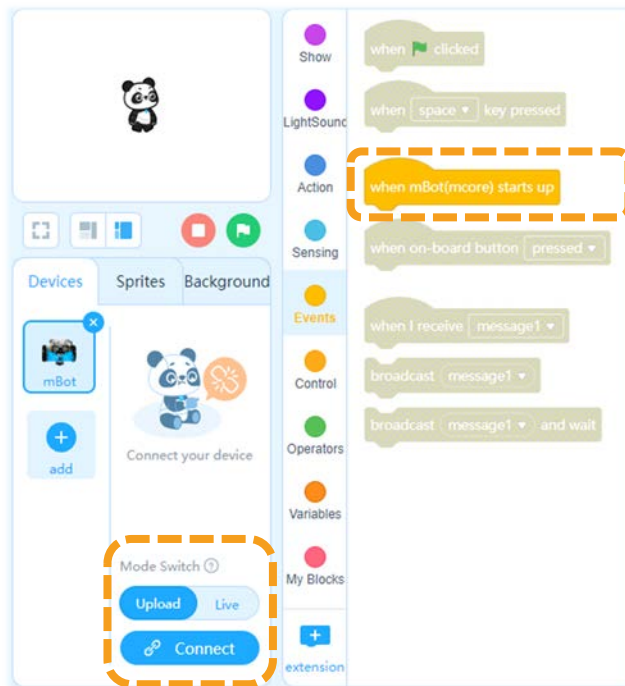
Task 2 Upload the Program

- Add the **LED** panel



Task 2 Upload the Program

- Choose the **Upload** mode



- Find and construct the scripts below:

when mBot(mcore) starts up

Events

forever

Control



light sensor

on-board ▼

light intensity

Sensing



LED panel

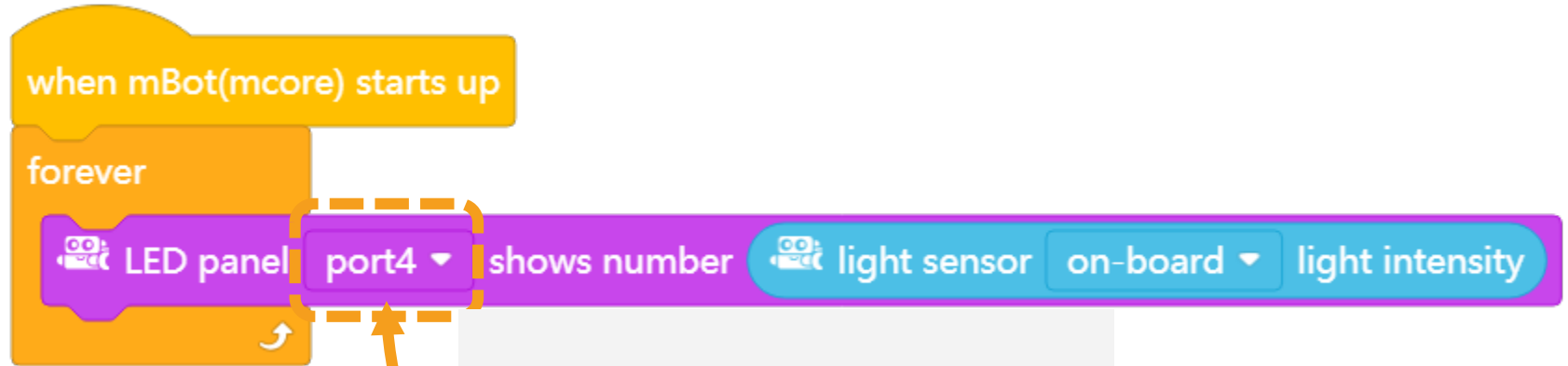
port4 ▼

shows number

2048

Show

- Check the port you connect:



Should be the
same port

Here hides a Light
Sensor. It can help
mBot “feel” the
brightness.

Task 2 Upload the Program

- **Question:** Point out the **Input** and **Output** in this demo

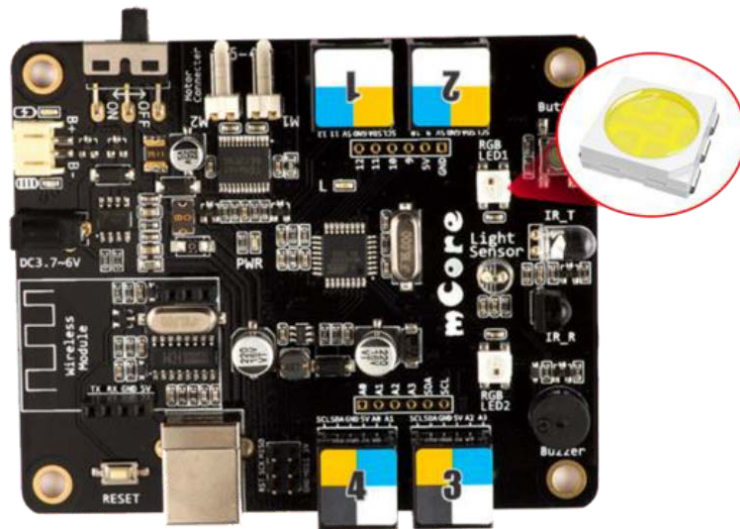


Practice



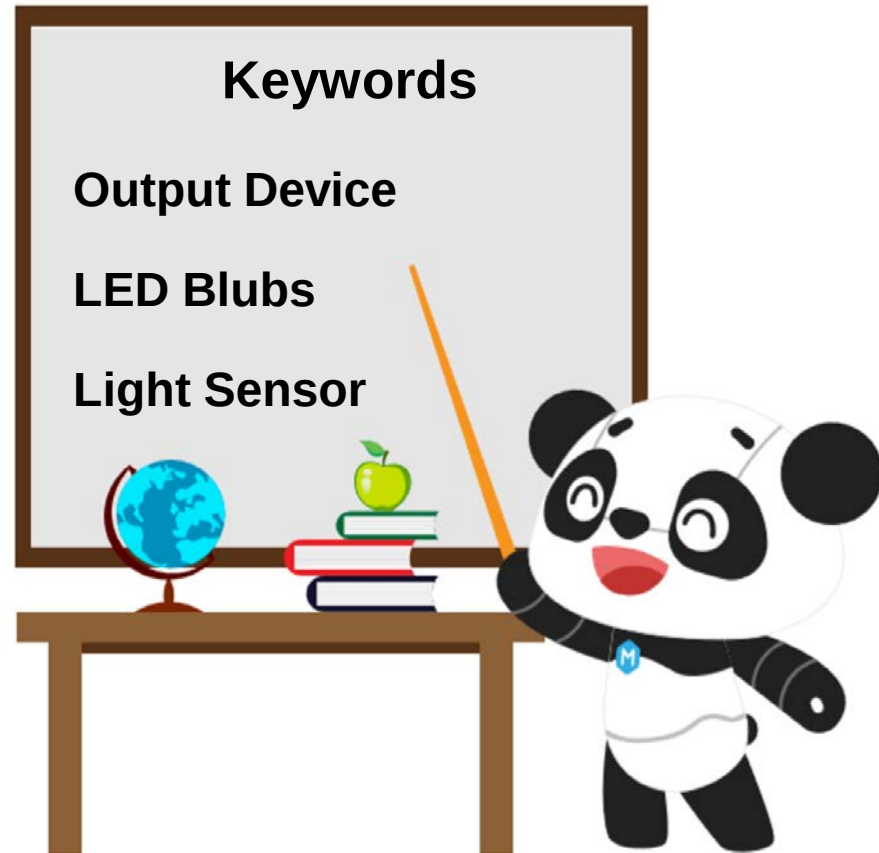
Task 3 Light up mBot

- Use different Events Scripts to trigger the LEDs on mCore:
- Choose the **Live** mode in mBlock



Wrap Up





Clean Up

