XGO Robot Dog

CODERS CS Team

Summer 2023

Meet the dog!

- Aluminum alloy shell (NW 500g)
- Built-in battery (120min in one charge)
- Each foot has three servos to allow a flexible and smooth movement
- Built-in actions, e.g., sit down, look for food, etc.
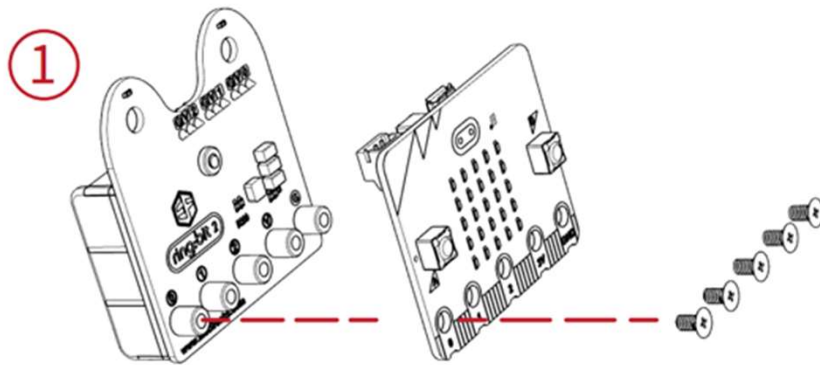
XGO robot dog

Charger

Ring:bit

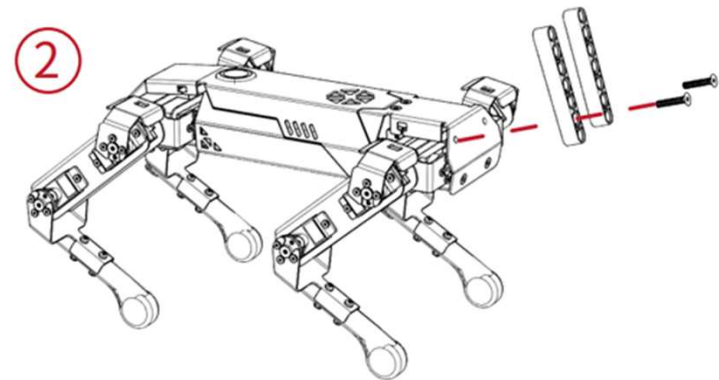Screw and Beam

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Assembling

- **Step-1:** Attach the micro:bit to the ring:bit expansion board using the short flat head screws
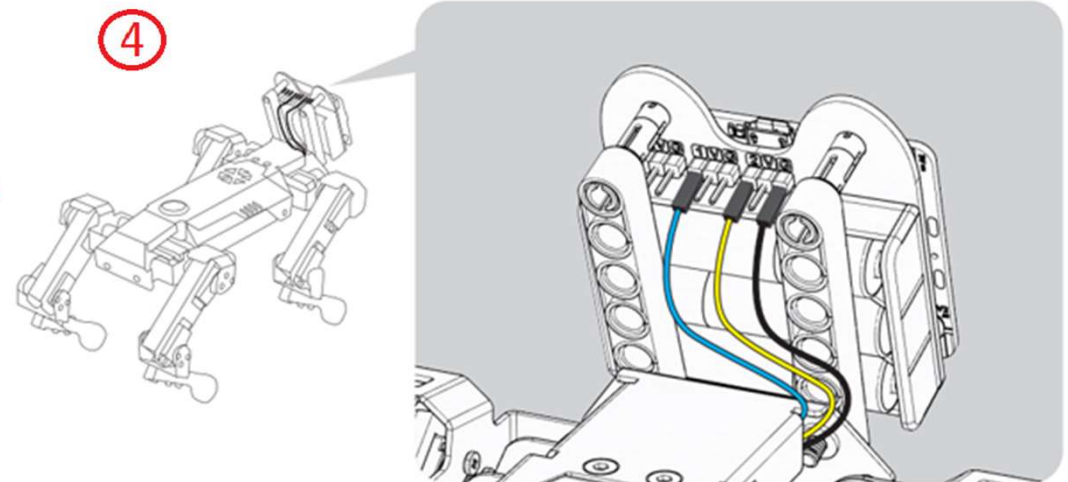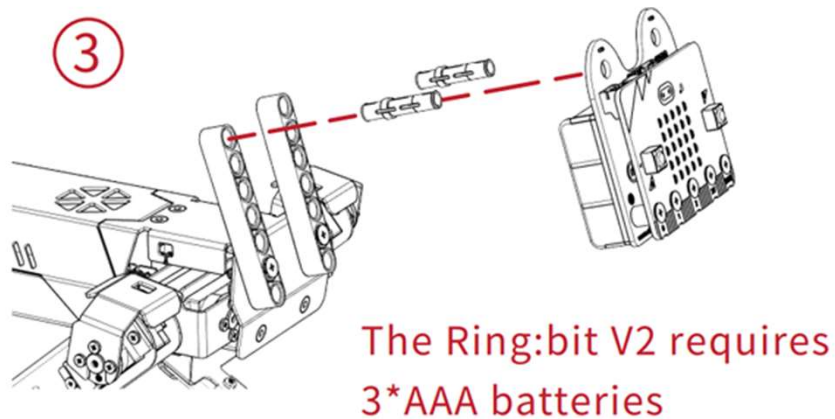
- **Step-2:** Use the longer flat head screws to fasten the seven-hole beam to the corresponding screw holes on the XGO

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Assembling Contd.

- **Step-3:** Add 3xAAA batteries and mount the ring:bit expansion board with the micro:bit installed to the seven-hole beam using the long pins

- **Step-4:** Connect the DuPont cables (Yellow, Black, and Blue) from the XGO to the corresponding ports of the ring:bit
- Blue DuPont cable is connected to port 1, yellow DuPont cable is connected to port 2, and black DuPont cable is connected to port G
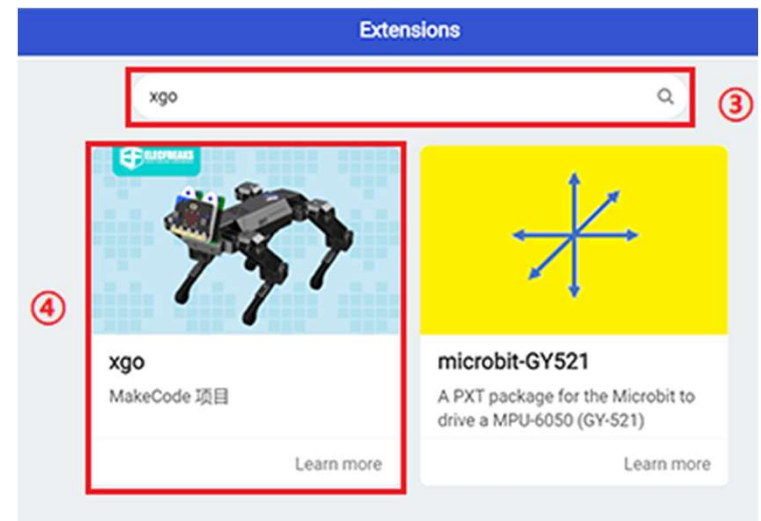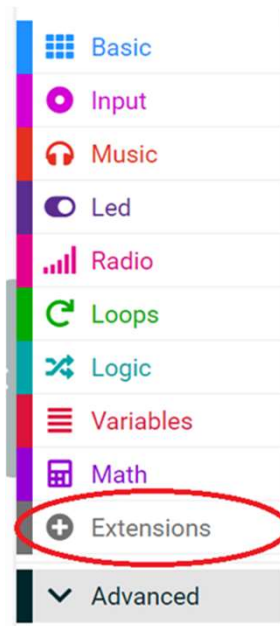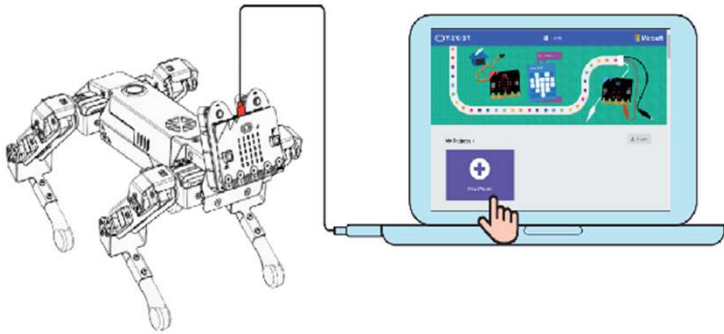

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The Ring:bit V2 requires 3*AAA batteries

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MakeCode-Project Setup
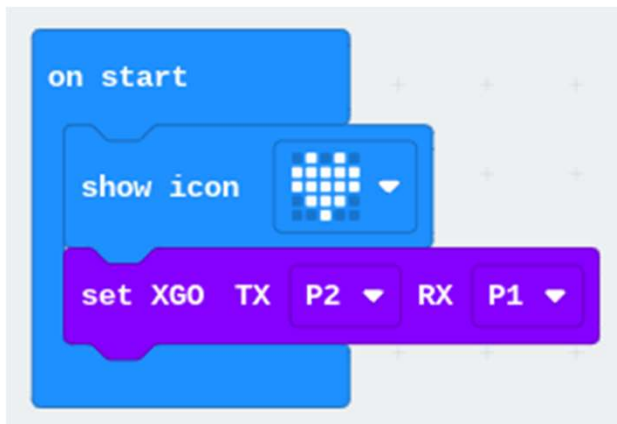https://makecode.microbit.org/

1. Connect your XGO micro:bit to the computer using USB cable
2. Goto the makecode website from Chrome web browser
3. Create a new project, and give it a unique name
4. Click on Extensions
5. Search for XGO
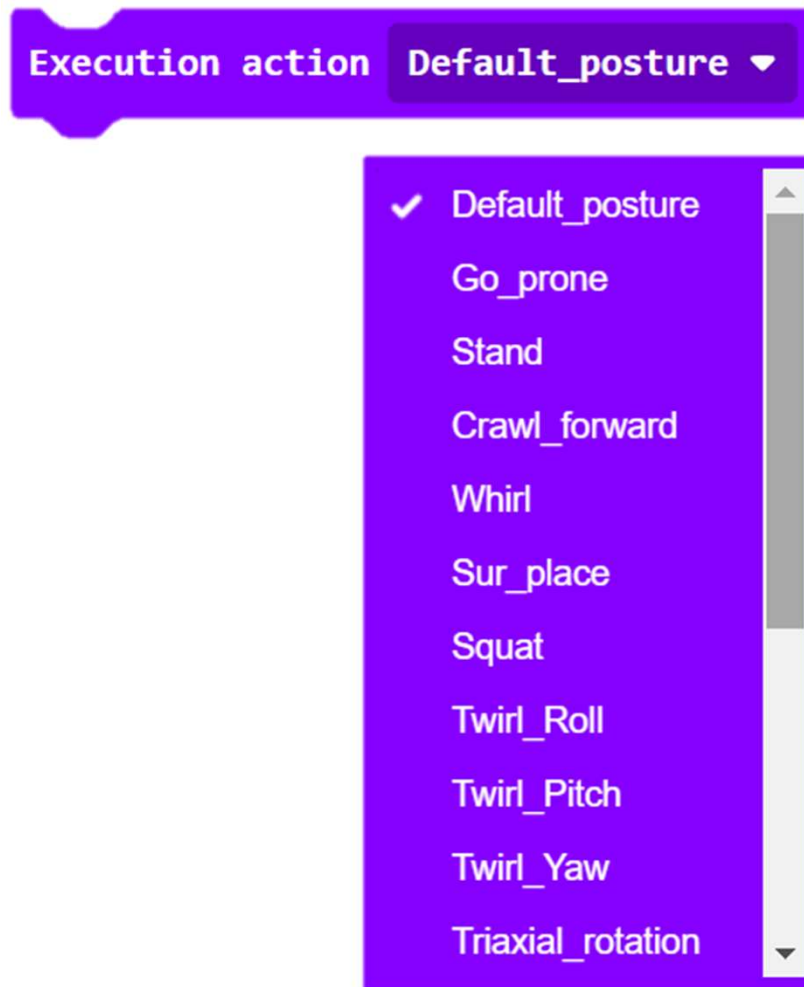6. Add XGO to your project

Programming XGO - Initialization

- Initialize the XGO on start

- Choose a default XGO action from the following list
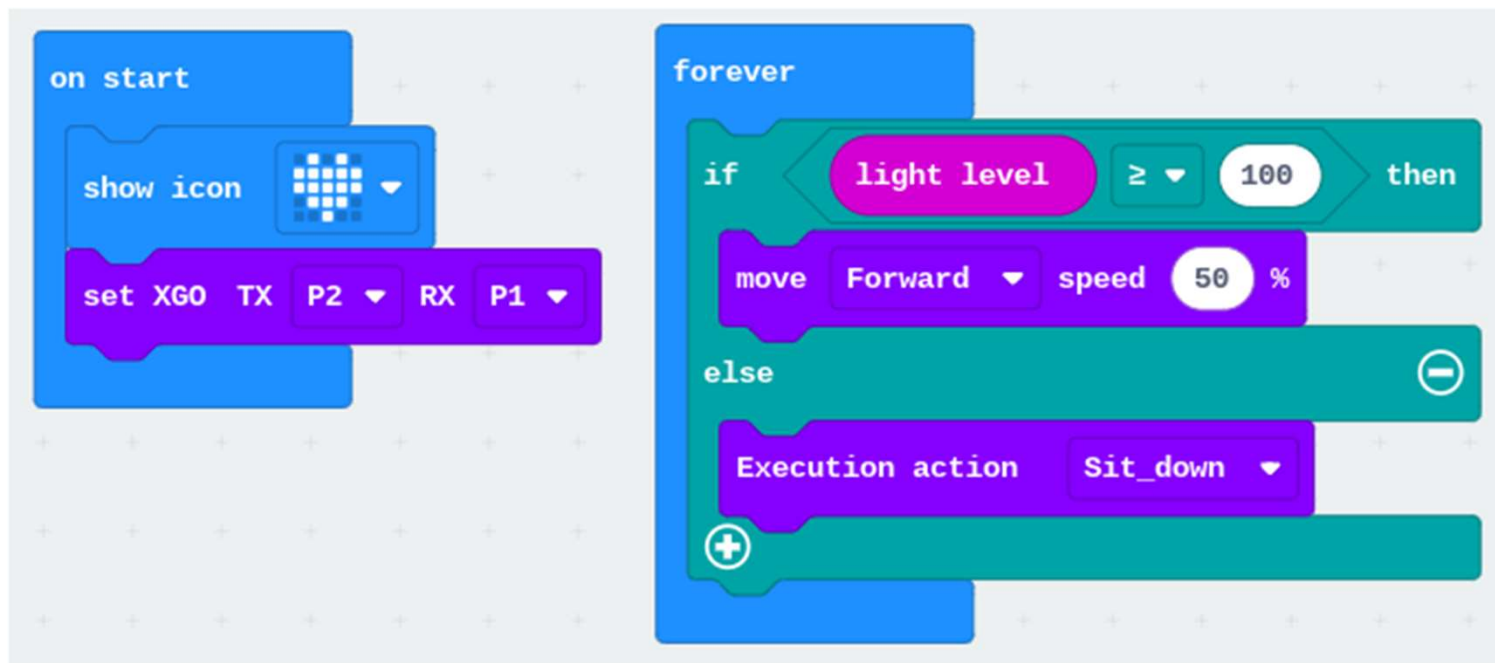
Activity 1: Follow the light

Goal: Program the XGO robot dog to follow a light source else execute a default action.

‖‖‖ Activity 2: I am hungry!

Goal: Program the robot dog to search for a bone little far away.

Expected functionalities:
1. Sender (micro:bit): The bone!

- In a standalone micro:bit, show the symbol of a bone

- Send radio transmission at a certain <u>transmit power</u> to help the robot dog to search for the bone.

2. Receiver (micro:bit): Robot dog micro:bit is the receiver and looking for food

- The dog stops searching and sits near the bone based on the received signal strength.

Note:
1. Both sender and receiver must be in the same radio group.
2. <u>Transmit power</u> can be as weak as 0 and as strong as 7. The default is 6.
3. Radio <u>received signal strength</u> ranges between -128 to -28.

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Activity 2: I am hungry – sample code

The bone (Sender micro:bit)

XGO Robot Dog (Receiver)

Thank You

Any Questions?

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