Microbit Robotics Advanced Level 3

Lesson 7

Biped Robot

Presented by Advanced Superlogic Team

Today's Topic

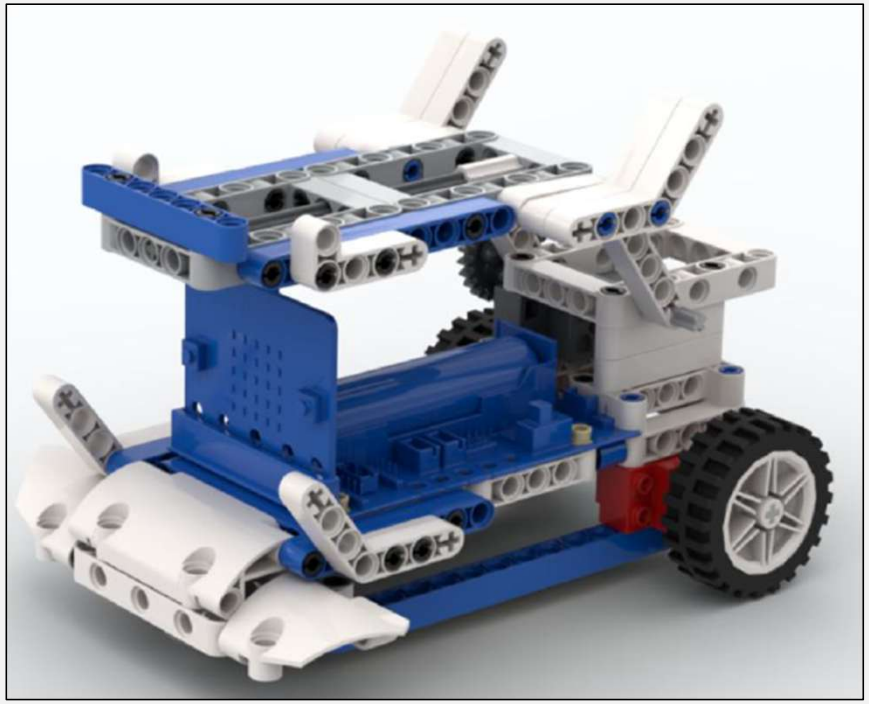
1. Revision on Previous Lesson
2. Build a Biped Robot
3. Biped Robot Challenge

Learning Outcome

1. Able to build a Biped Robot with Superbit Set
2. Able to program biped robot
3. Able to modify biped robot and add new functions to it

What we did in previous lesson

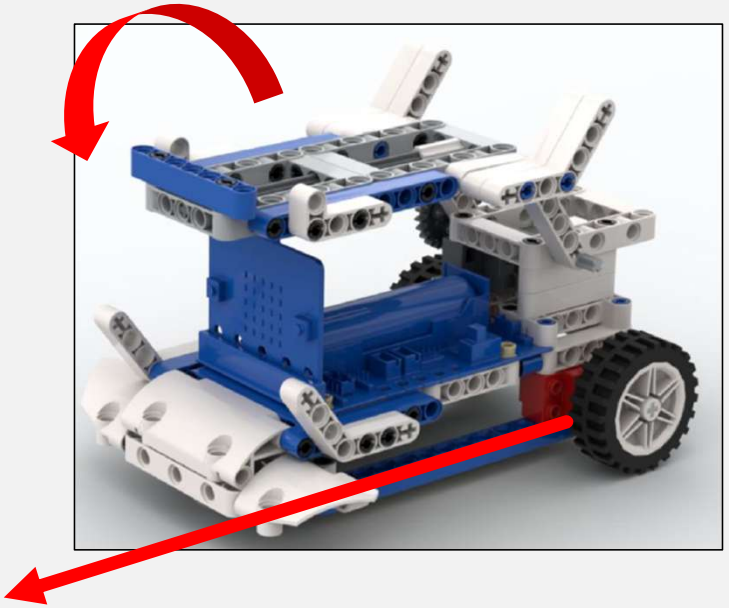
Completed The Message Chain Programming



Doing 2 Actions at Once

Since some of our actions might happened at once, for instance, I want to eject my load while I'm moving forward to get some momentum while unloading the trash, instead of just staying there and unload.

Here we need "forward" and "lift" actions to be done together.



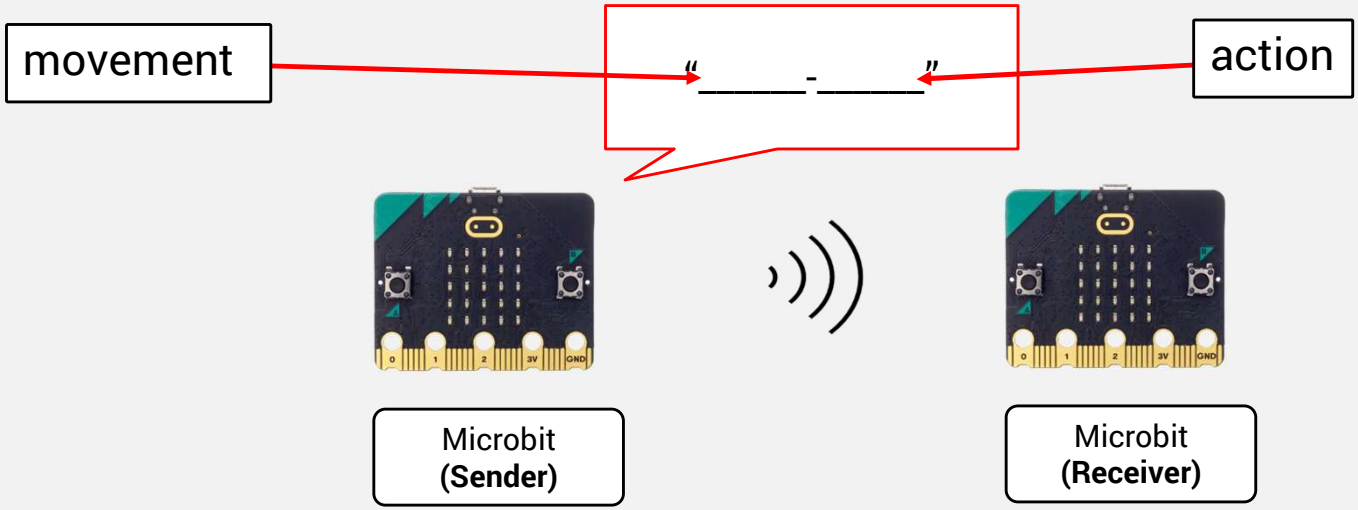
Doing 2 Actions at Once

Unfortunately, we are only allowed to send 1 message every time, so do the receiver.

With just 1 action per message, it's hardly done to make our robot to listen to 2 actions.

And our robot will only choose 1 action to perform.

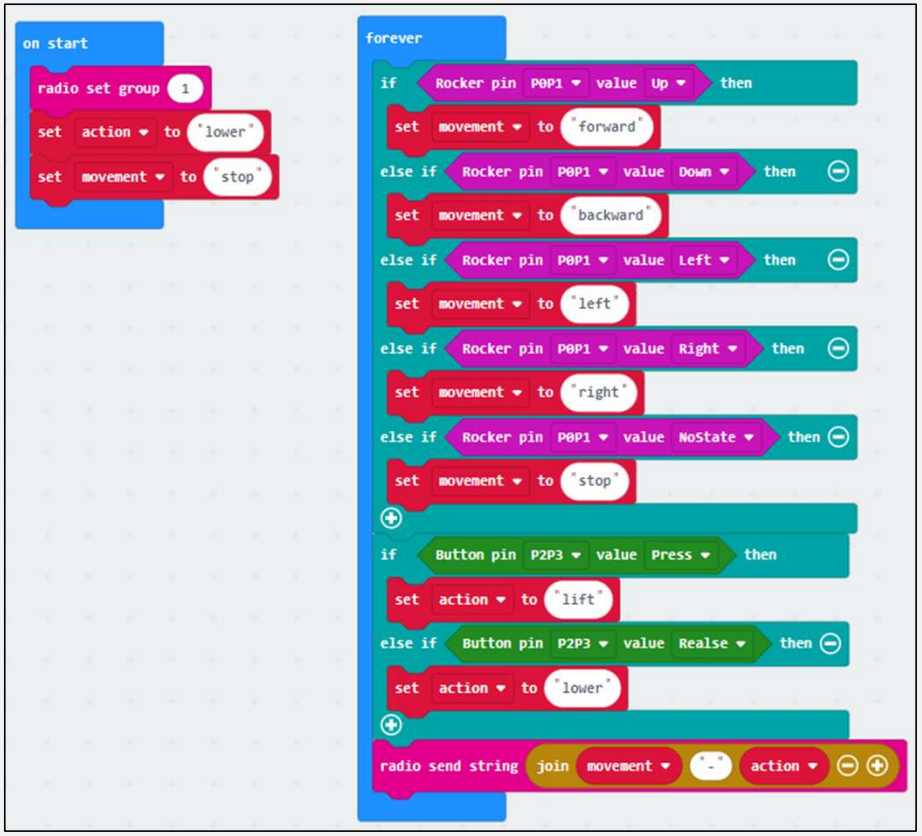
Message Chain



We can compile the movement and action into a message with the “-” as a separator.

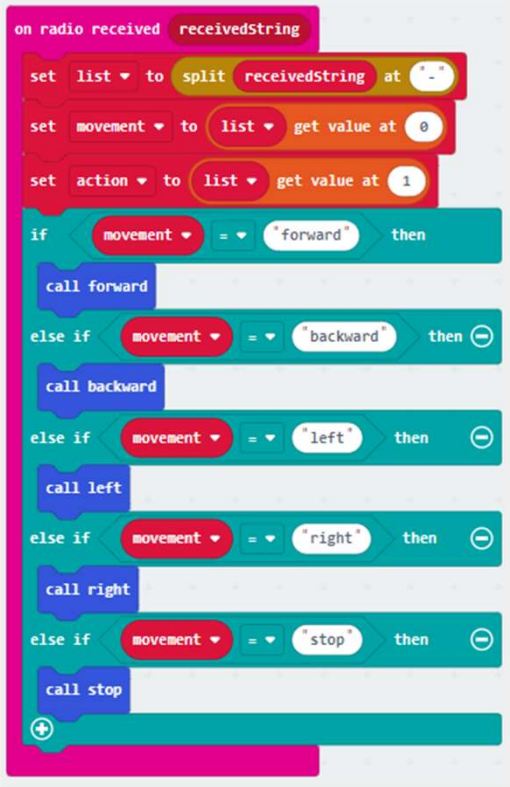
Then we use our receiver to split the message into 2 actions (movement and action).

Remote Controller Codes



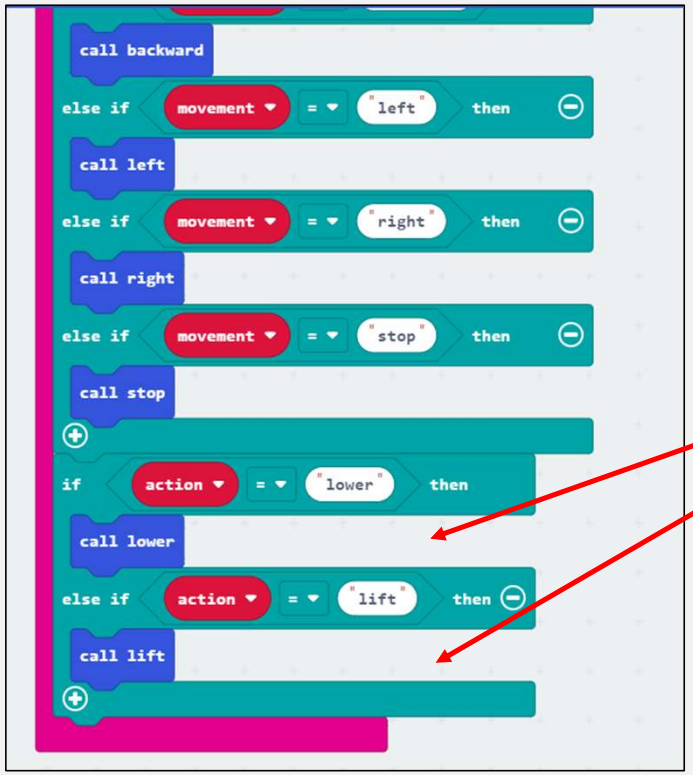
Now your Remote Controller coding will be like this.

Movement functions



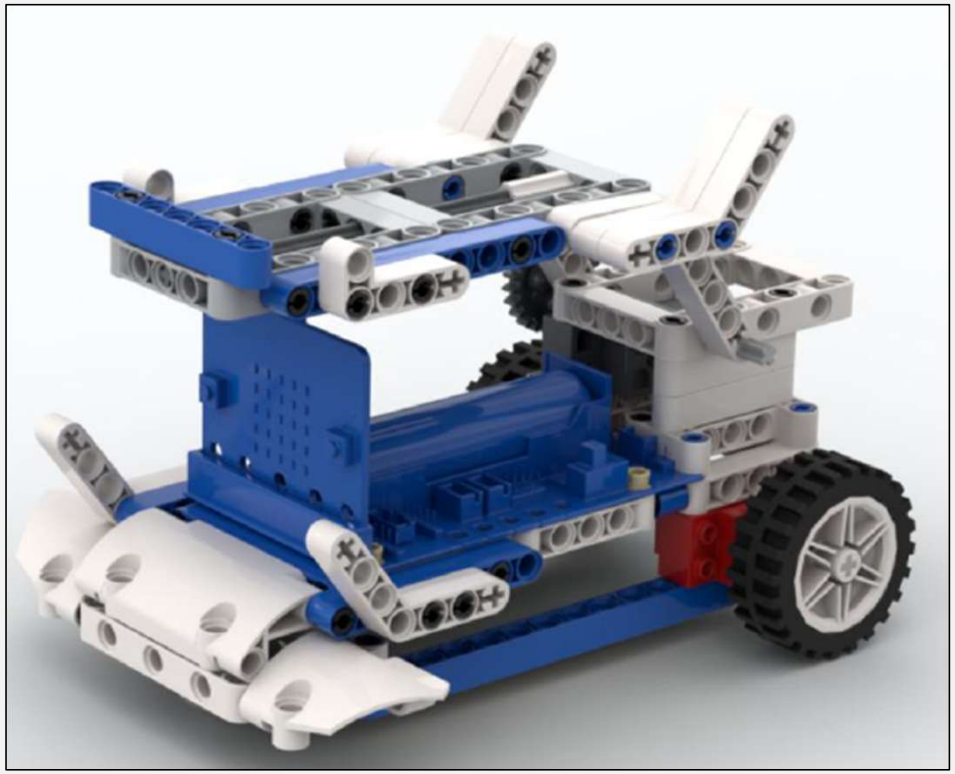
Your movement conditions are set, it should look like the left.

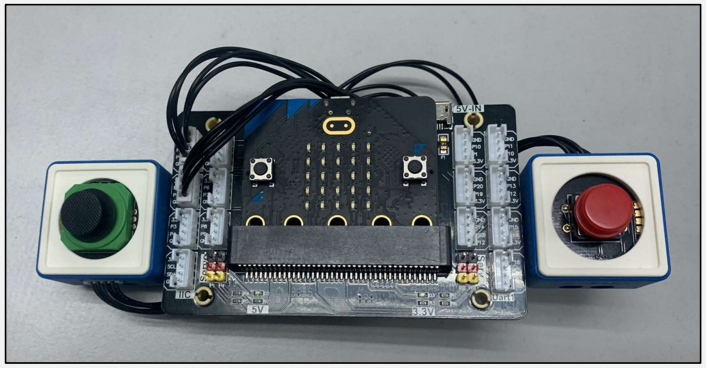
Action functions



Add in the condition for both lower and lift after the movement conditions.

Phenomenon

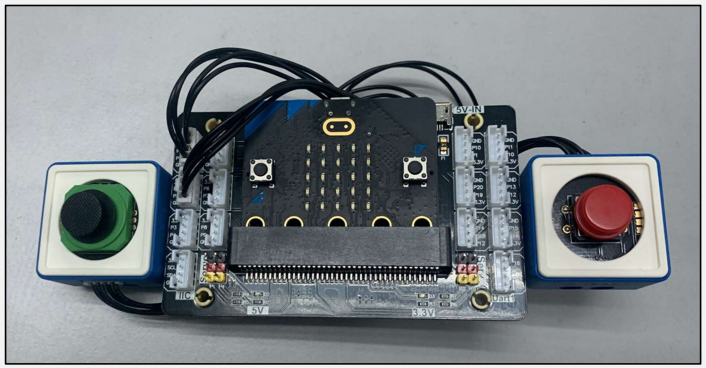




Connect your remote controller to your laptop to power on and try to interact with the Rocker module and the button module.

Biped Robot

Biped Robot – Mechanical Movement

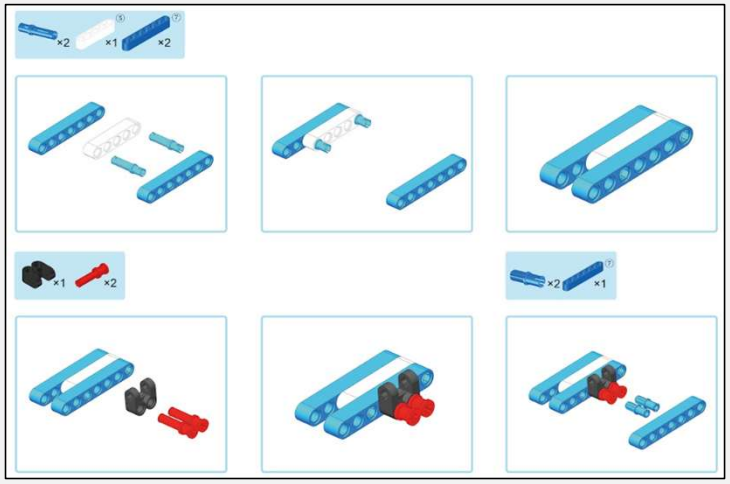


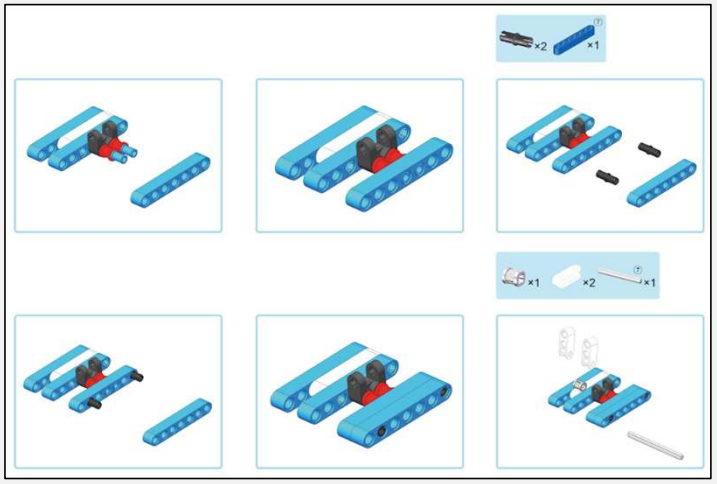
In this lesson, you are going to build a biped robot.

Your mission is to observed what electronic components are used in your biped robot and based on what you learnt from all previous lesson to make it move.

Build a Biped Robot

Biped Robot – Building Instruction



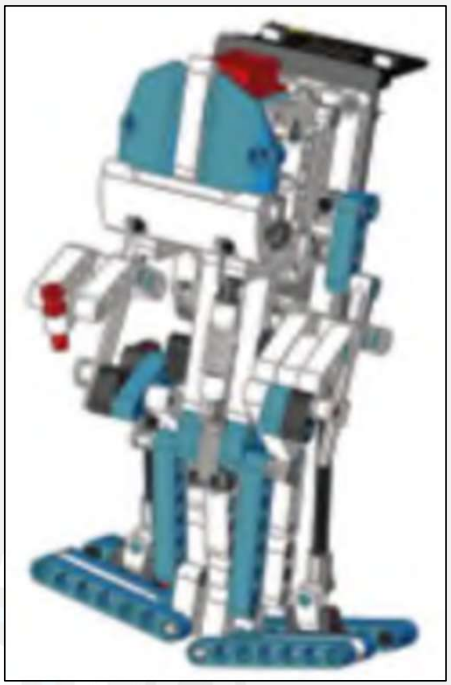


Go to your browser > Type “bit.ly/gaismicrobit”

Search for Microbit Term 3 → Lesson 7 – Biped Robot → Biped Robot Instructions
(From page 1 to 16, you can zoom in some part if you can’t see clearly)

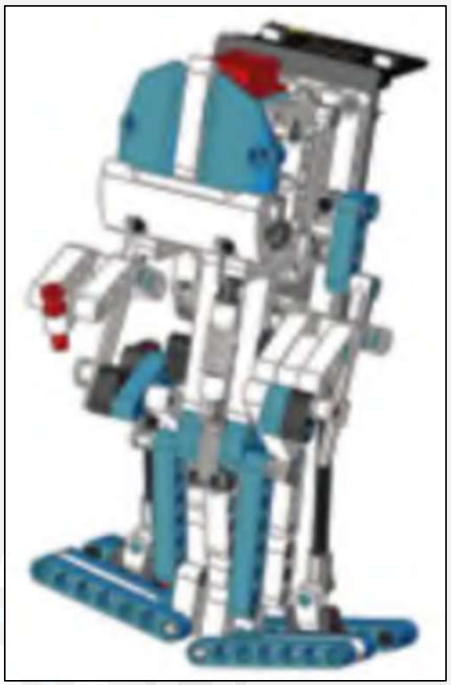
CHALLENGE
for : Lesson 7

L7 – Challenge 1



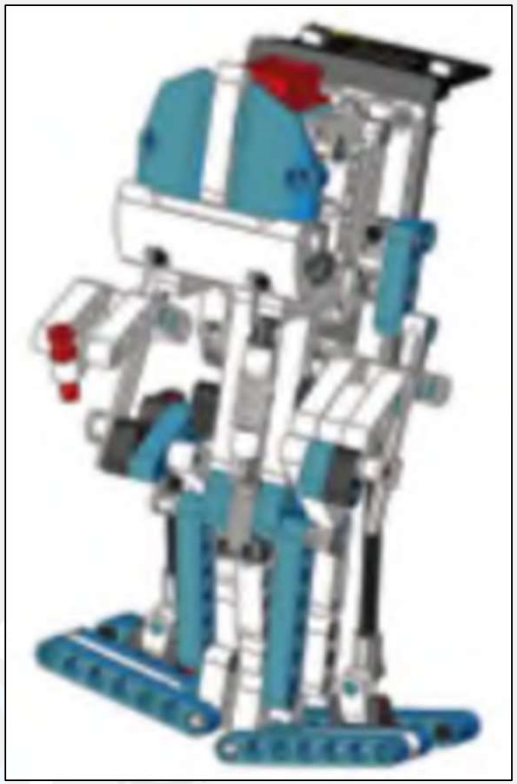
Program your Biped Robot to move **forward** with your WOM controller

L7 – Challenge 2



Program your Biped Robot to move **backward** with your WOM controller

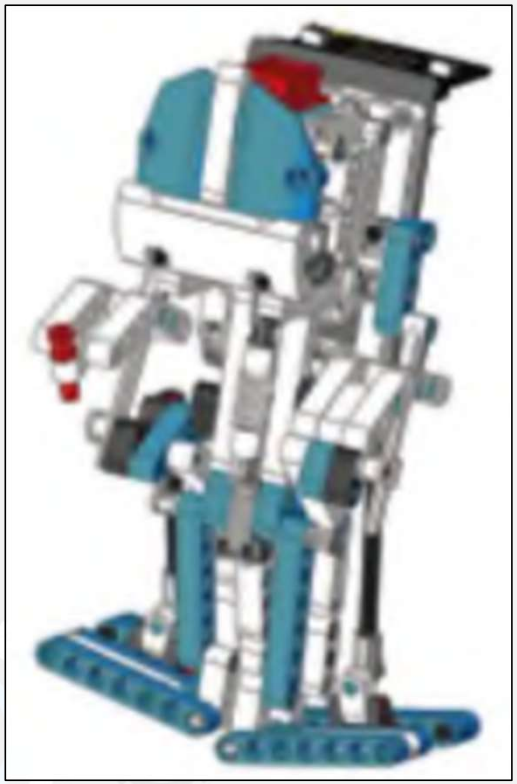
L7 – Challenge 3



Modify your Biped Robot to make it more stable when your biped robot is moving.

You can also try to add servo onto it for a new function.

L7 – Mission



Can you add some servos for your biped and add a new function to it.

After done, explain to the teacher what new function is added with the servo.