



Logic

Space



Coding



Focus



Classroom Discipline

01

Please sit down and keep quiet in class.

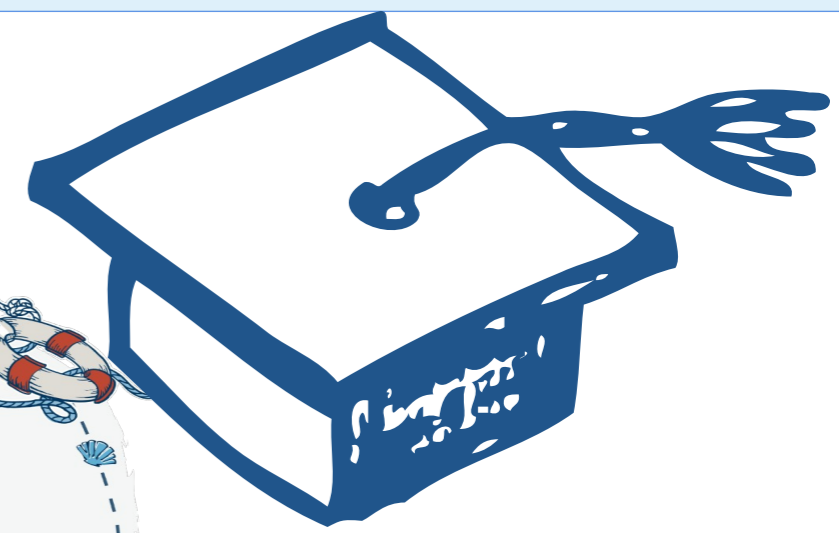
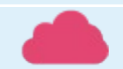
02

Please raise your hand if you have any questions.

03

Please observe carefully when the pictures are played.





Tyrannosaurus

01



Course Goals



Thinkidea

1

Learning goals

2

Project Discussion

3

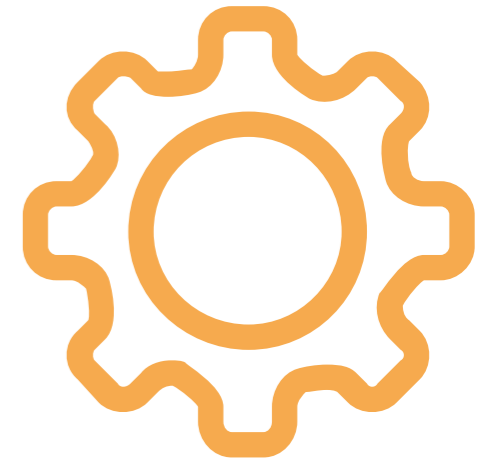
Logic Programming

4

Have a try

5

Consolidate and extend





1

Build a dinosaur park where a timid dinosaur moves forward and hides whenever it detects something in front of it.

2

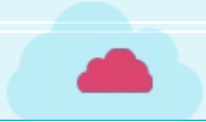
Consolidate modules such as "**Operators**" > " **if...then...else...**" , "**light**" .

3

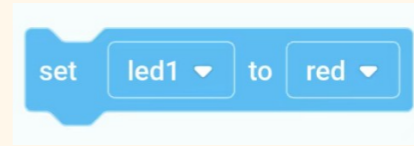
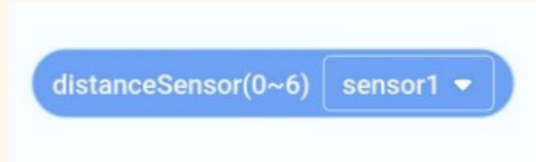
Learn new modules such as "**repeat until...**" , "**broadcast message**" "**receive message**" .

4

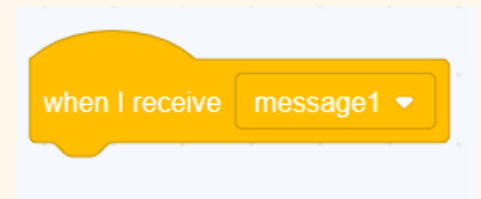
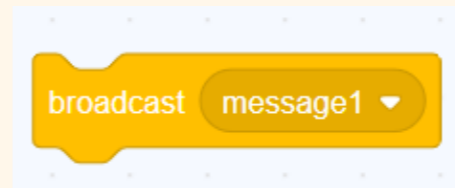
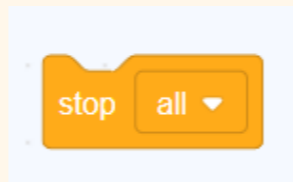
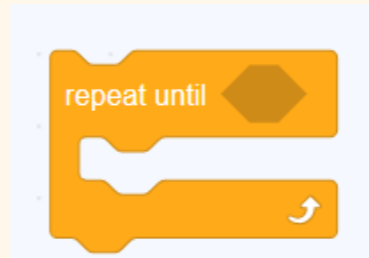
Comprehensively apply the learned modules to complete programming projects and expand.

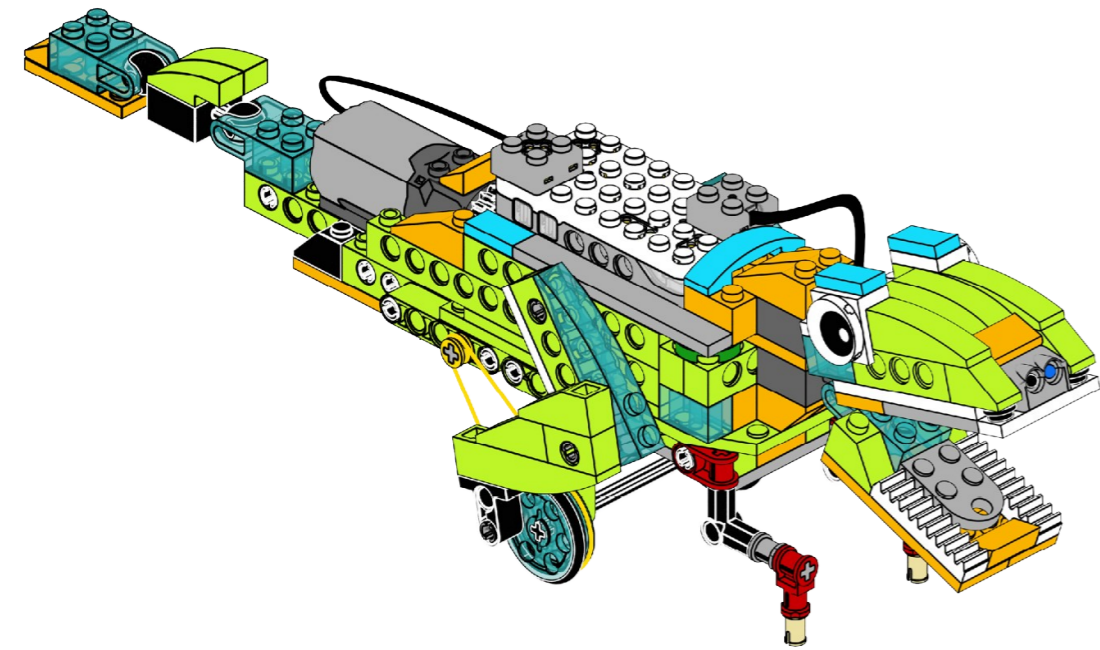


Consolidate modules:



New modules:

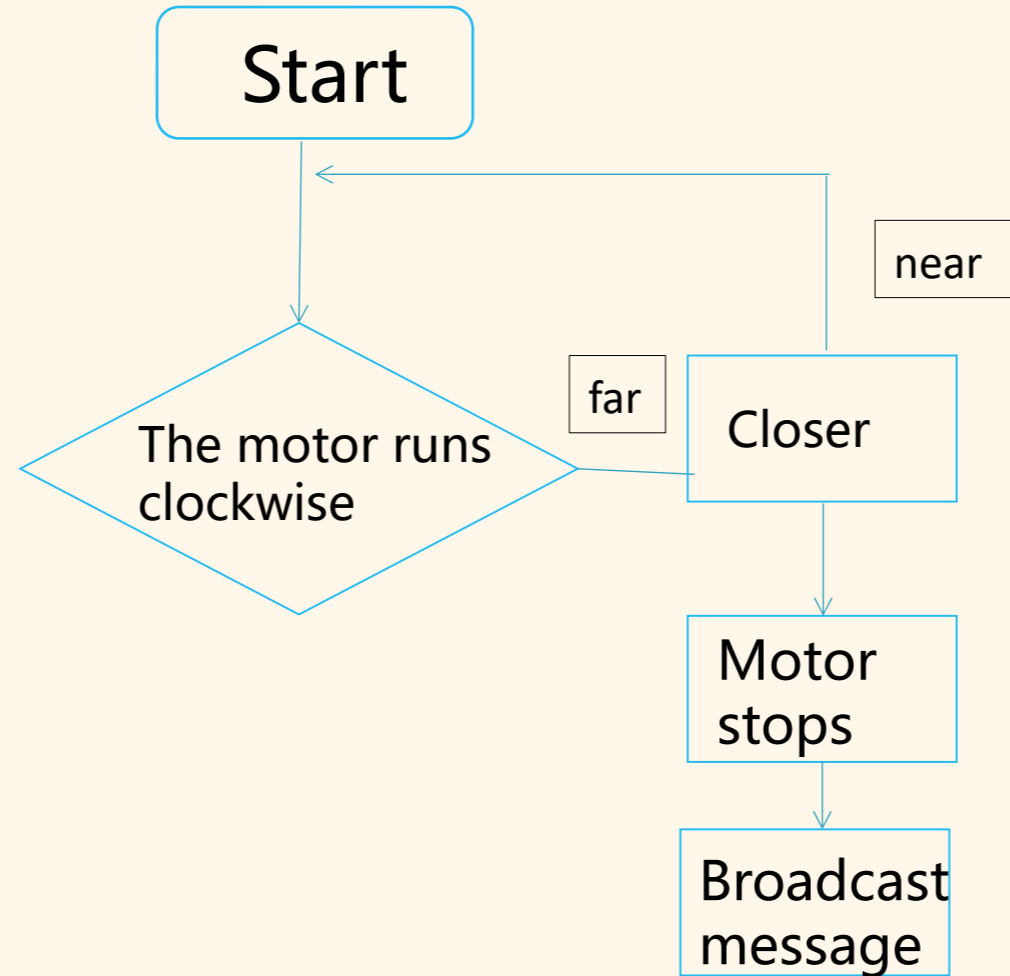




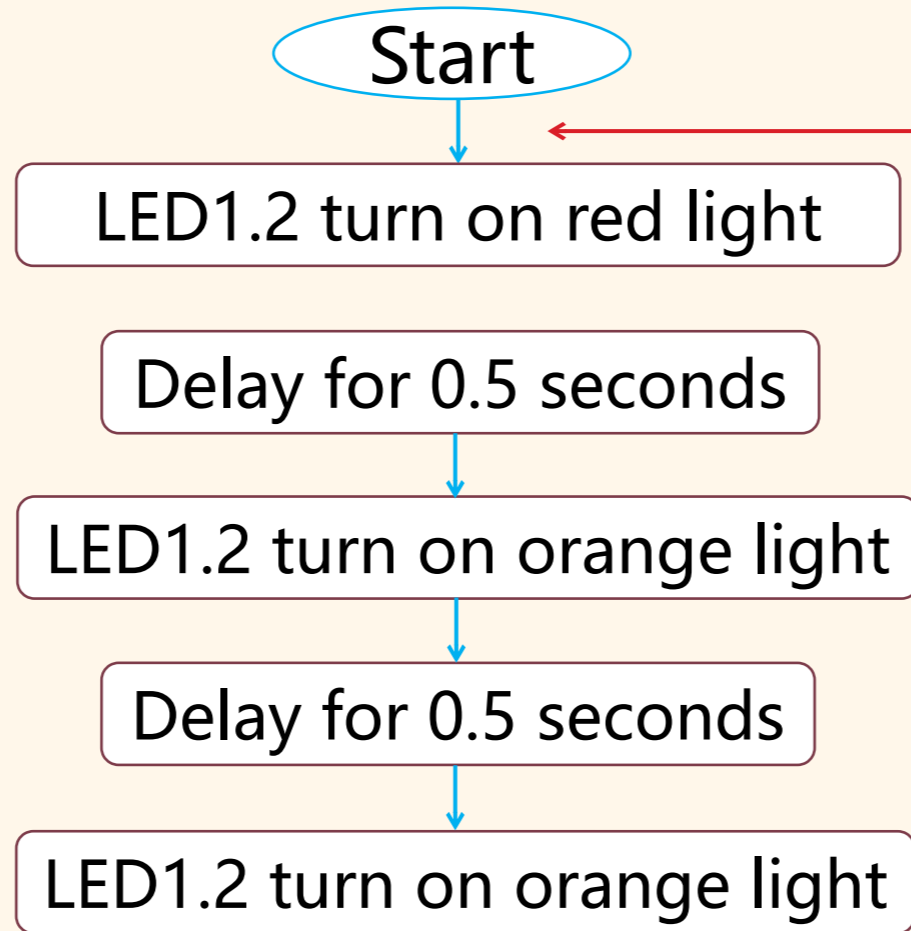
Project Discussion

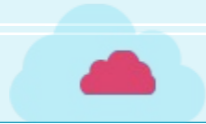
- 1. Make the Tyrannosaurus move forward.**
- 2. Flash different lights.**
- 3. Stop when it sees an obstacle.**
- 4. The lights stop as well.**

1. Programming logic for moving forward

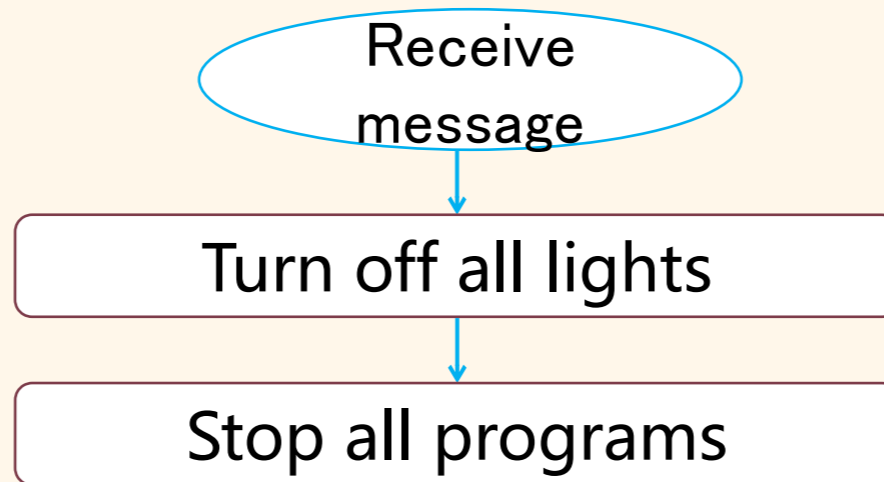


2. Programming logic for turning on lights





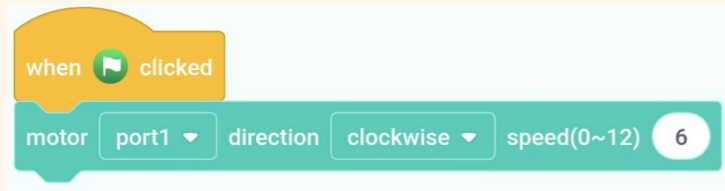
2. Programming logic for turning on lights



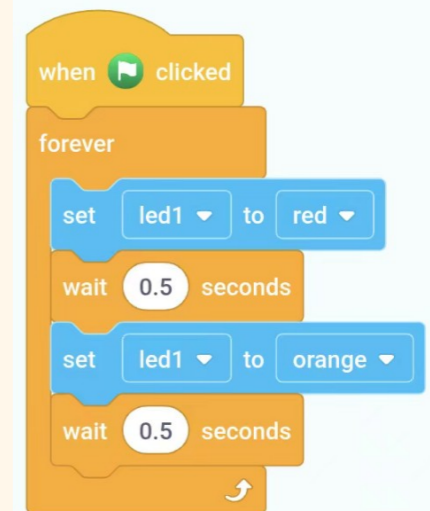
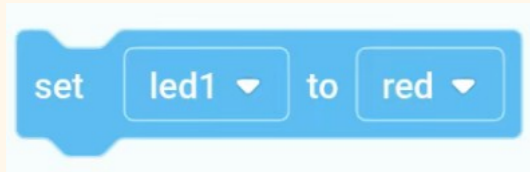


1. Make the Tyrannosaurus move forward.

1. Tyrannosaurus moves forward.



2. Program the lights according to your own ideas!



Remember to put a time delay between each script! !

1. Learn parallel program

1. How can you make the robot move and flash the lights at the same time?

```
when clicked
  motor port1 direction clockwise speed(0~12) 6
  set led1 to red
  wait 0.5 seconds
  set led1 to orange
  wait 0.5 seconds
  set led1 to yellow
  wait 0.5 seconds
```

The code block starts with a 'when clicked' trigger. It then executes a sequence of actions: turning the motor on port1 clockwise at speed 6, setting the LED to red, waiting 0.5 seconds, setting the LED to orange, waiting 0.5 seconds, setting the LED to yellow, and finally waiting 0.5 seconds.

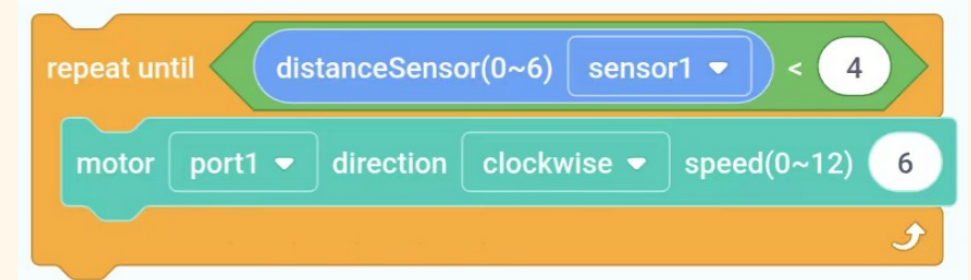
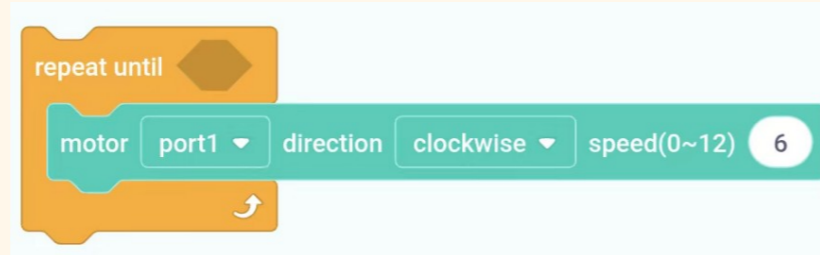
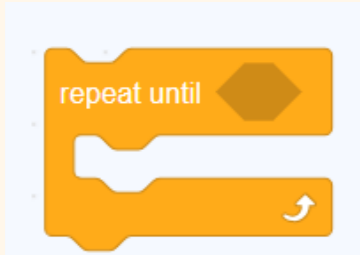
2. Run two or more programs at the same time.

```
when clicked
  motor port1 direction clockwise speed(0~12) 6
  forever
    set led1 to red
    wait 0.5 seconds
    set led1 to orange
    wait 0.5 seconds
```

The code block starts with a 'when clicked' trigger. It then executes two parallel actions: turning the motor on port1 clockwise at speed 6, and a 'forever' loop that sets the LED to red, waits 0.5 seconds, sets the LED to orange, and waits 0.5 seconds.

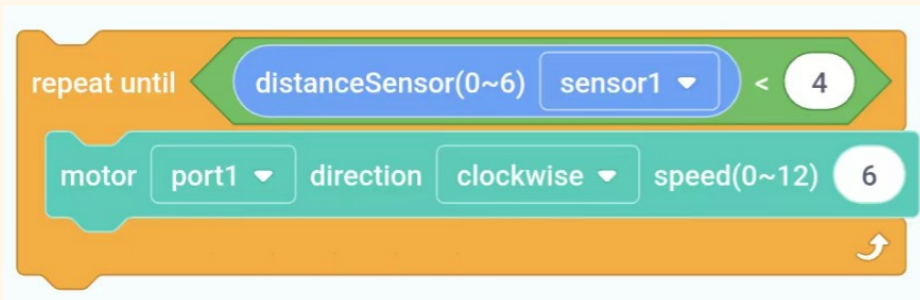
2. Detect obstacles

1. Learn a new conditional statement

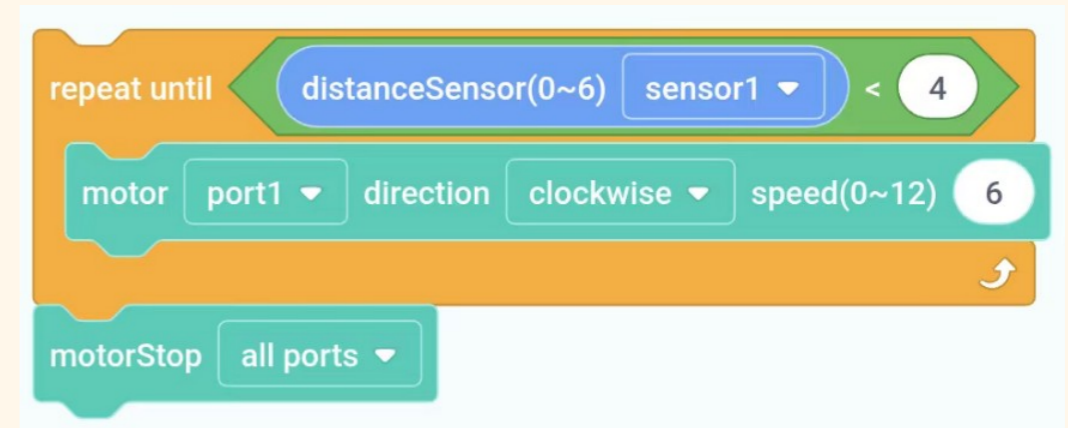


Repeat until the condition is met.

2. Stop running when an obstacle is detected



How do you stop it?

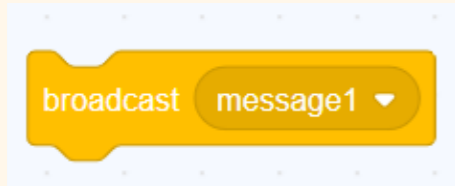




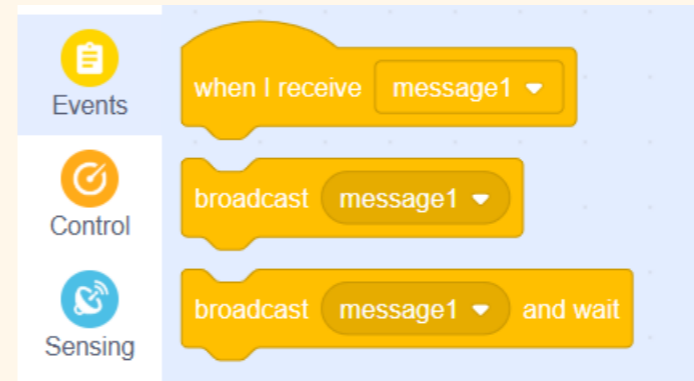
Did anyone notice anything?

1. All scripts stop when the car stops

1. Learn new modules

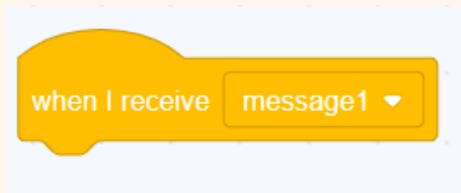


Broadcasts are divided into a sender and a receiver. After a message is sent, the program will only run correctly if the correct signal is received.

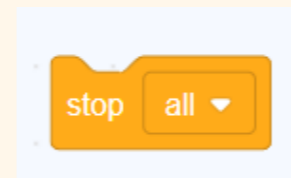


You can find it in "Events".

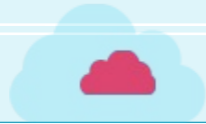
2. Learn new modules



The receiver marks the beginning of the program.



All scripts stop running.



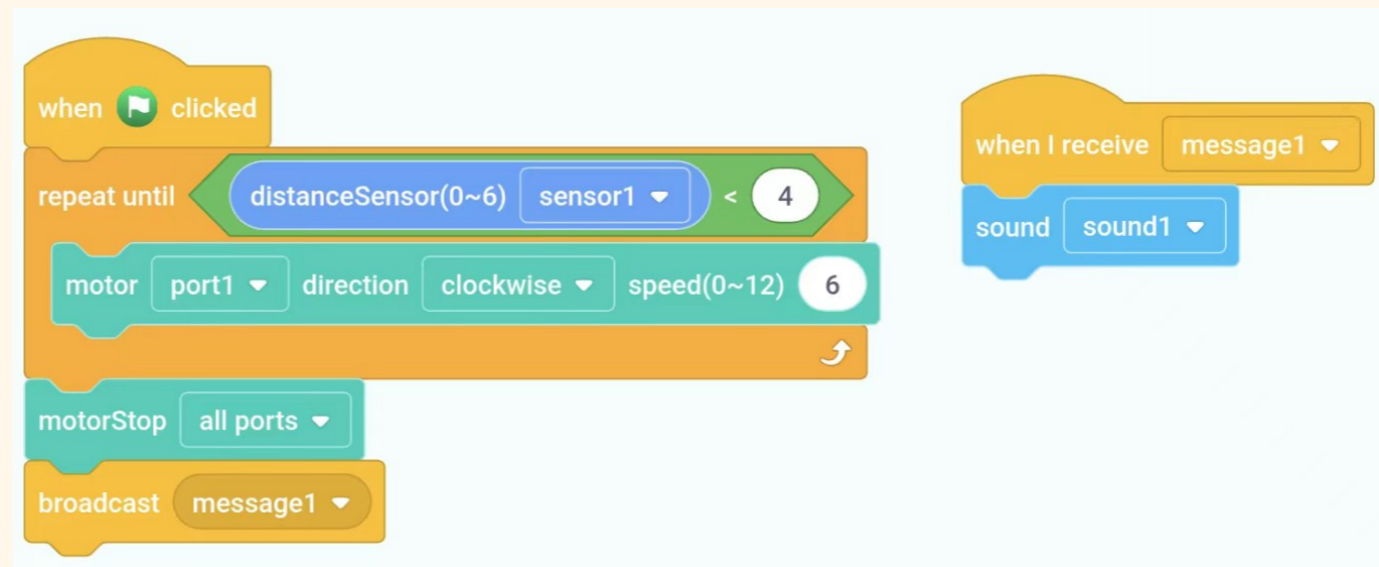
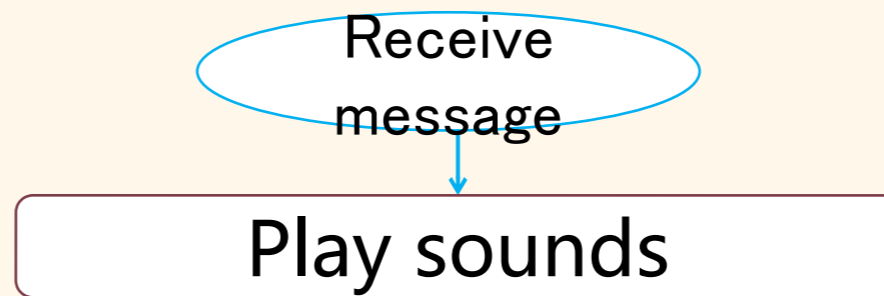
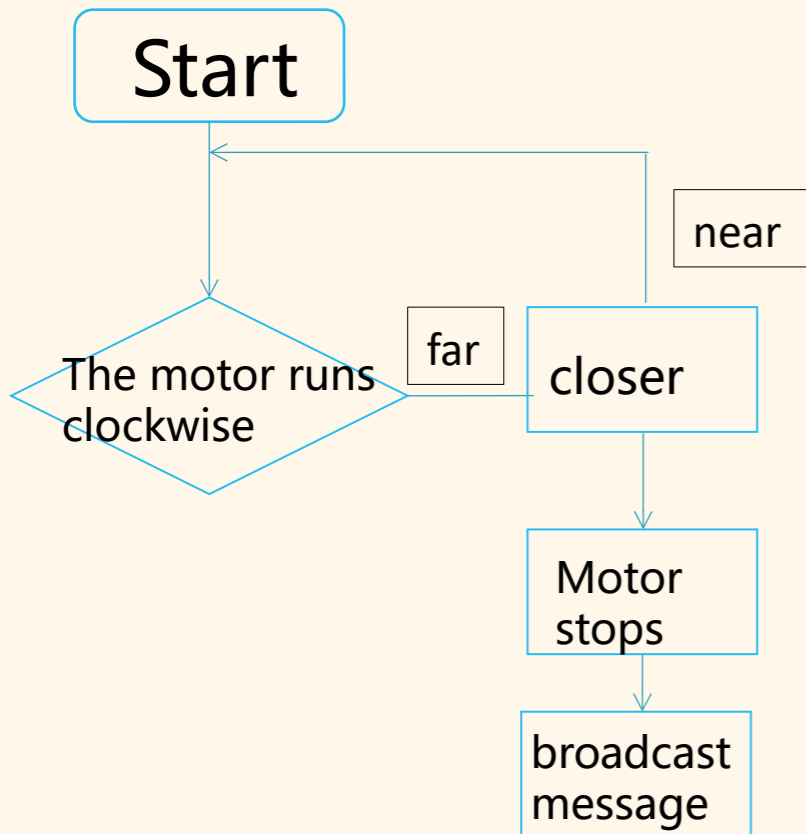
1. Think about how to place it.

```
when clicked
repeat until distanceSensor(0~6) sensor1 < 4
  motor port1 direction clockwise speed(0~12) 6
motorStop all ports
broadcast message1
```

```
when I receive message1
set all to red
stop all
```

1. Have a try

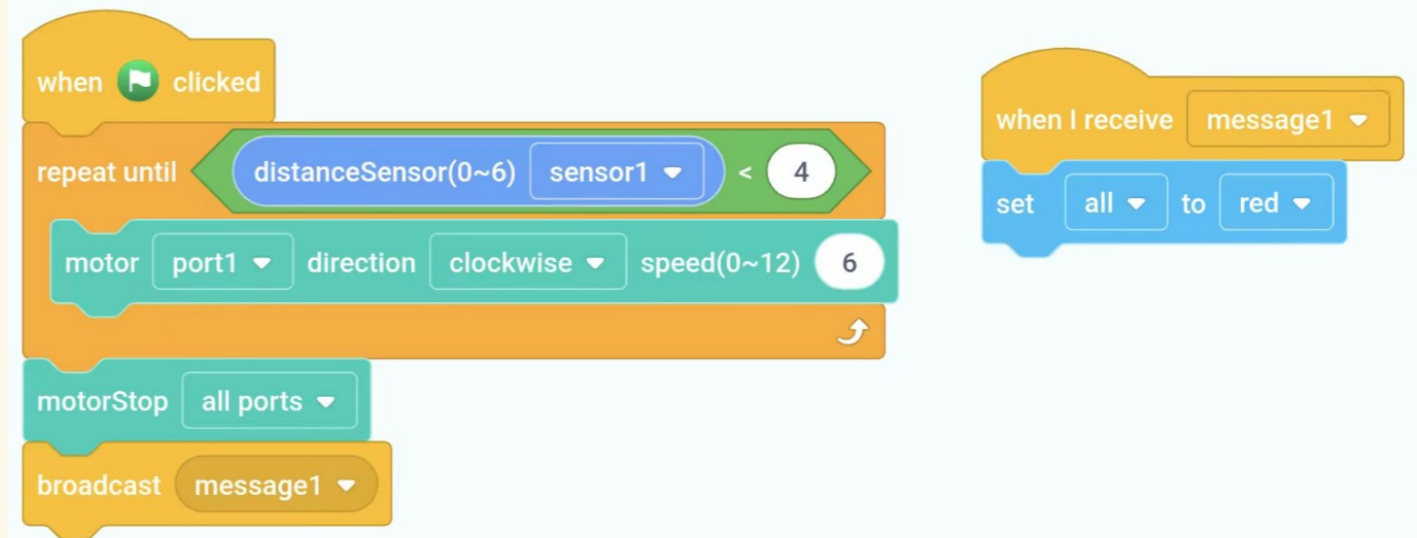
Task 1: When the Tyrannosaurus stops, it broadcasts a message. After receiving the message, a sound effect will play. Try writing down your flowchart for this!





Consolidate and extend

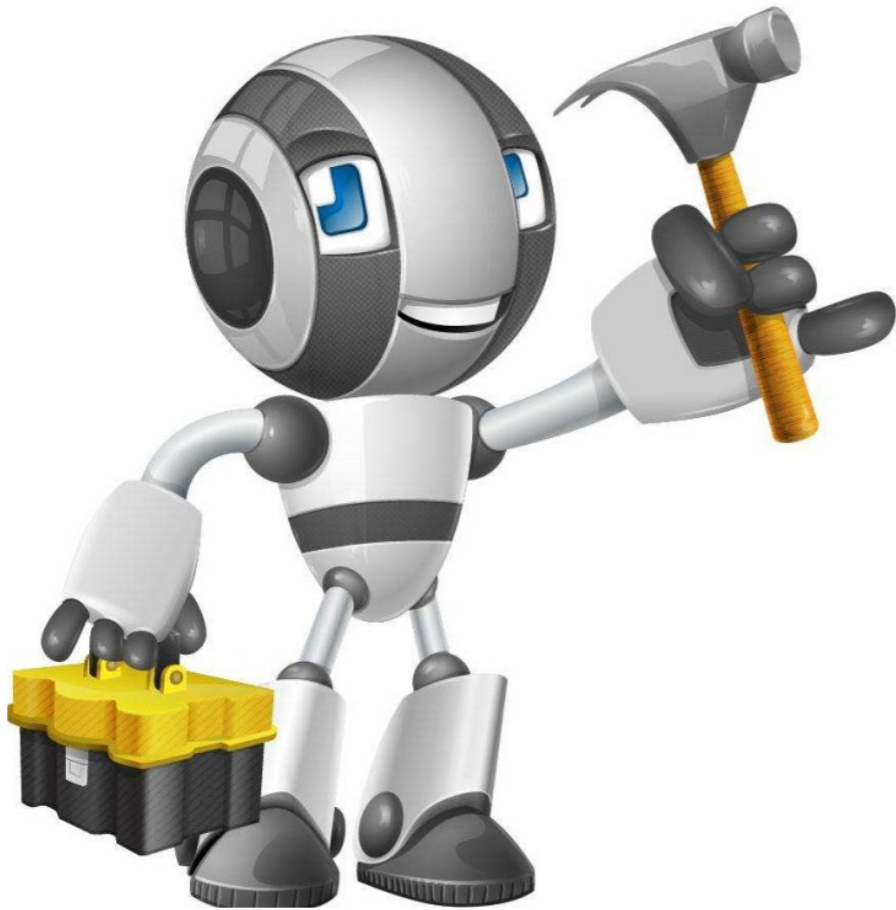
Q1 : Alex programmed the Tyrannosaurus, but even after the car stops, the host controller keeps switching the lights. Why is this happening?



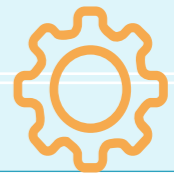
```
when clicked
  repeat until distanceSensor(0~6) sensor1 < 4
  motor port1 direction clockwise speed(0~12) 6
  motorStop all ports
  broadcast message1

when I receive message1
  set all to red
```

A1 : Because not all scripts were stopped, turning it off just caused the light program to start looping again.



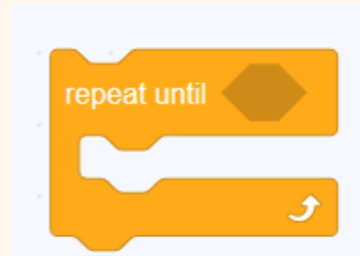
Q &
A



Knowledge Review

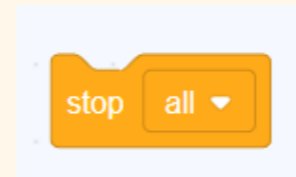


(1)

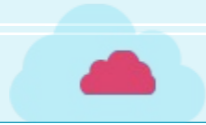


An If command keeps looping until a certain condition is met.

(2)



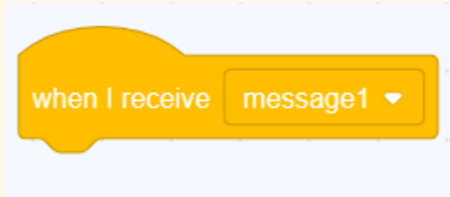
All scripts stop running.



Knowledge Review

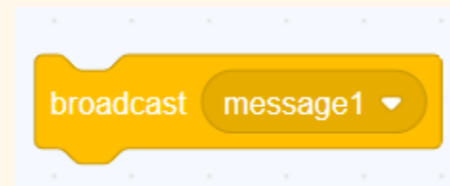


(3)



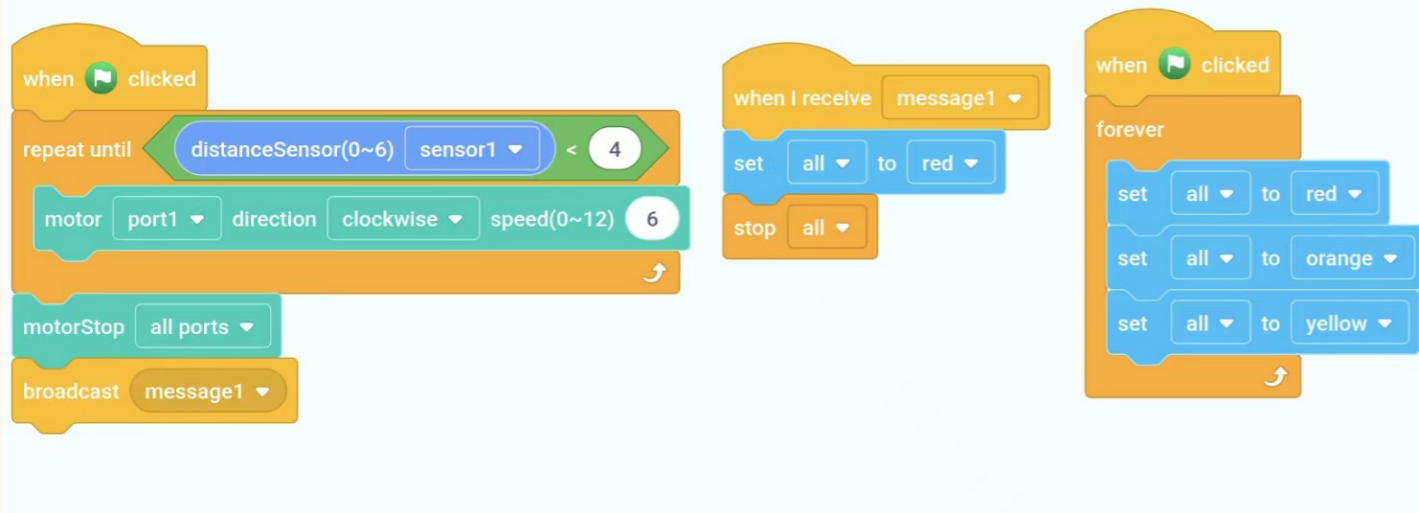
Receiver module

(4)



Broadcasts are divided into a sender and a receiver. After a message is sent, the program will only run correctly if the correct signal is received.

Alex programmed the car like this, but the host controller's LED lights never change. Why is that? ()

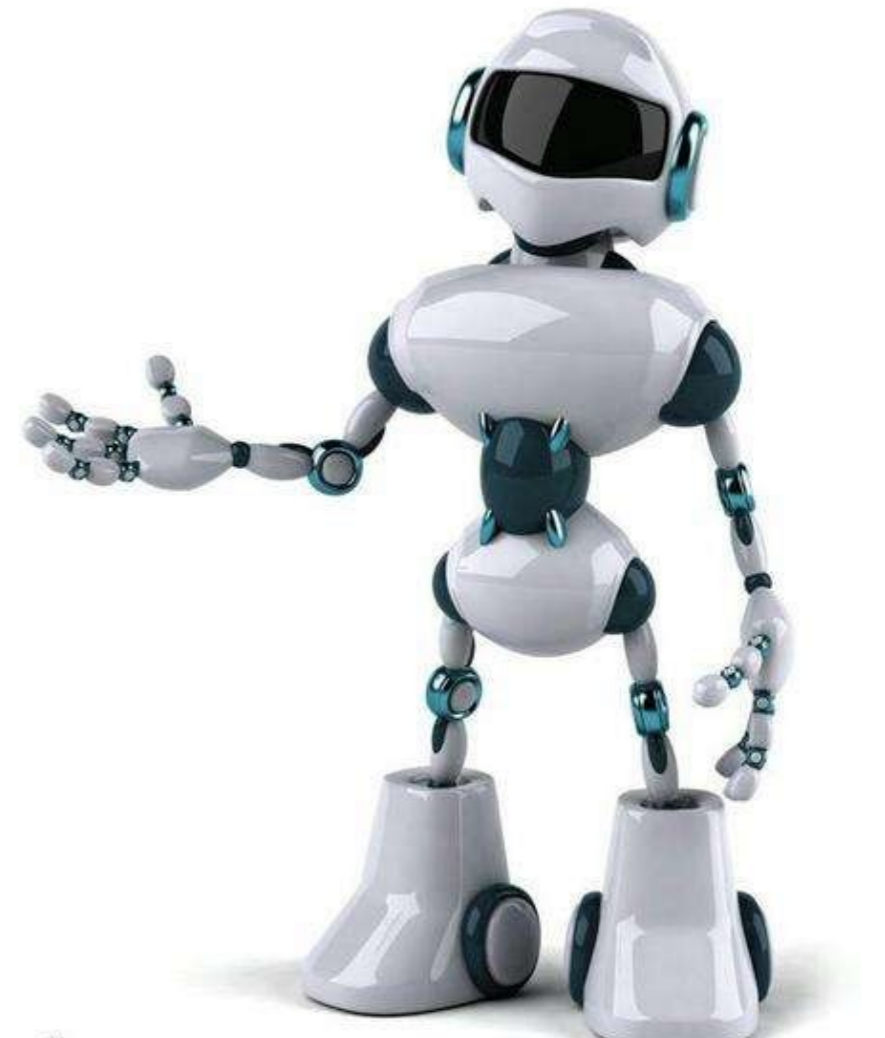


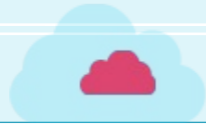
```
when clicked
  repeat until distanceSensor(0~6) sensor1 < 4
  motor port1 direction clockwise speed(0~12) 6
  motorStop all ports
  broadcast message1

when I receive message1
  set all to red
  stop all

when clicked
  forever
    set all to red
    set all to orange
    set all to yellow
```

- A** There aren't enough lights. **B** The lights don't have a time delay.
C The battery has run out. **D** A loop module was included.





Answer **B**

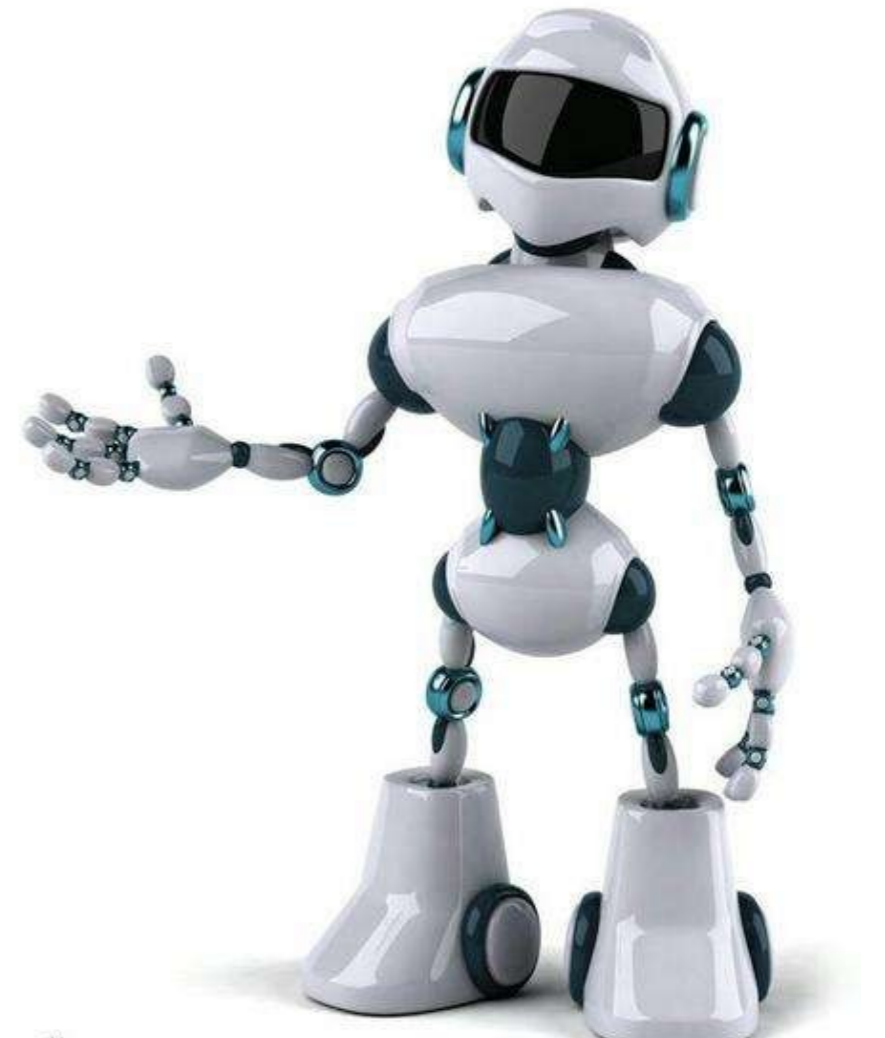
:

Analysis **Because the lights don't have a time delay.**

:

The image shows three Scratch code blocks:

- Block 1 (Left):** A "when clicked" block followed by a "repeat until" loop. The loop condition is "distanceSensor(0~6) sensor1 < 4". Inside the loop is a "motor" block with "port1", "direction clockwise", and "speed(0~12) 6". Below the loop is a "motorStop" block for "all ports" and a "broadcast" block for "message1".
- Block 2 (Middle):** A "when I receive message1" block followed by a "set all to red" block and a "stop all" block.
- Block 3 (Right):** A "when clicked" block followed by a "forever" loop. The loop contains three "set all to" blocks (red, orange, yellow) and three "wait 0.5 seconds" blocks.





Talk





THANKS

