Qoopers series course

Section 5
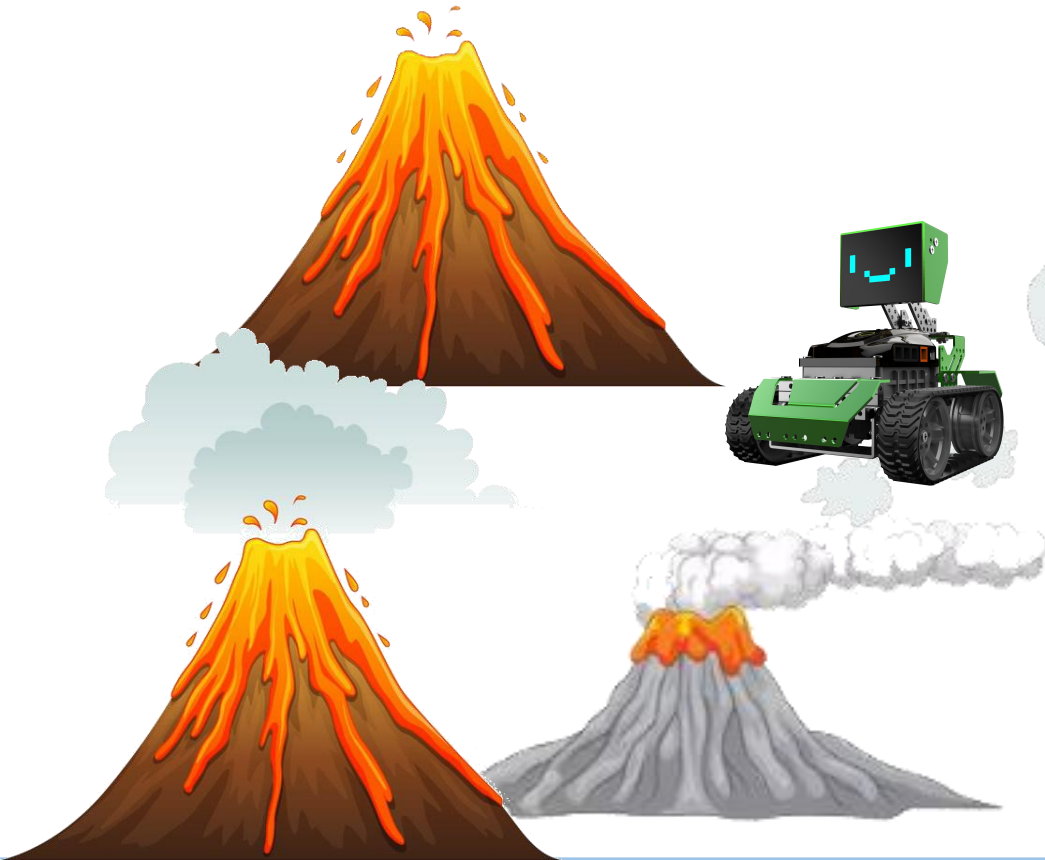《Captain Alloy B》

# Curriculum objectives

**Knowledge and skill**
1.Learn about intermediate programming of Qoopers, wield remote control model and matrix screen model of Captain Alloy；
2.Complete programming that Captain Alloy leave volcanic group；

**Process and methods**
1.Exercise students' logical thinking ability through complete tasks；

**Emotional attitude and values**
1.Train students' attitude towards doing things with dispassion by completing tasks of Captain Alloy.
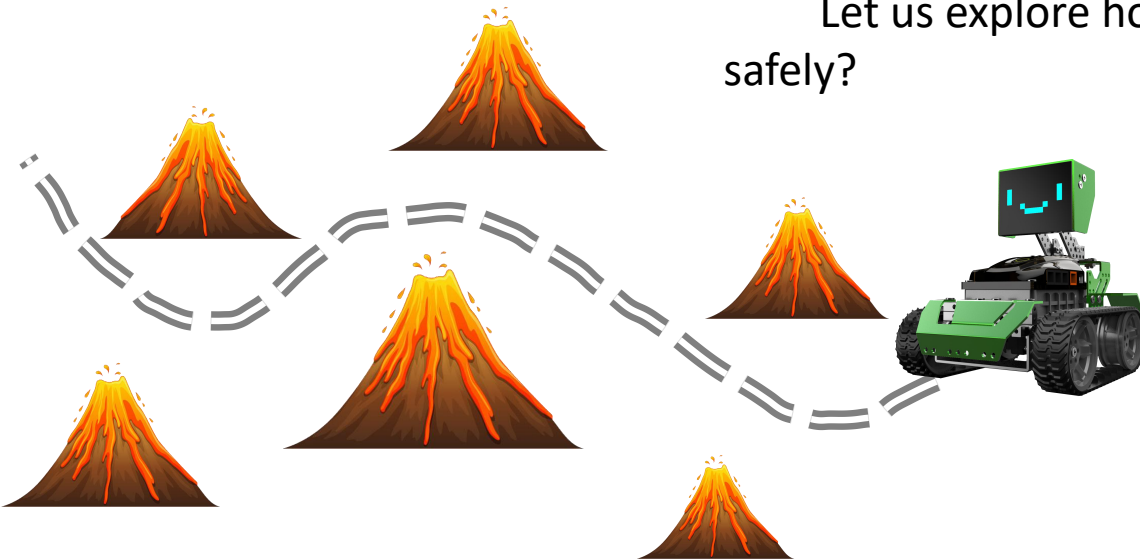
Robobloq

In a task of rock exploration, Captain Alloy get into the volcano group of Metal Block planet carelessly, the volcano, which may spurt at any time, threaten. the safety of Captain Alloy, so we need to leave here as quickly as possible and reach safe place.

Robobloq

Facing danger, the calm and cool-headed Captain Alloy didn't show any fluster, instead it observe terrain around it carefully and plan a route that can quickly evacuate from there on the basis of volcano terrain.

For leaving safely, this route reveals winding because it need to detour volcano that they meet, but that didn't affect movement speed of Captain Alloy a little.
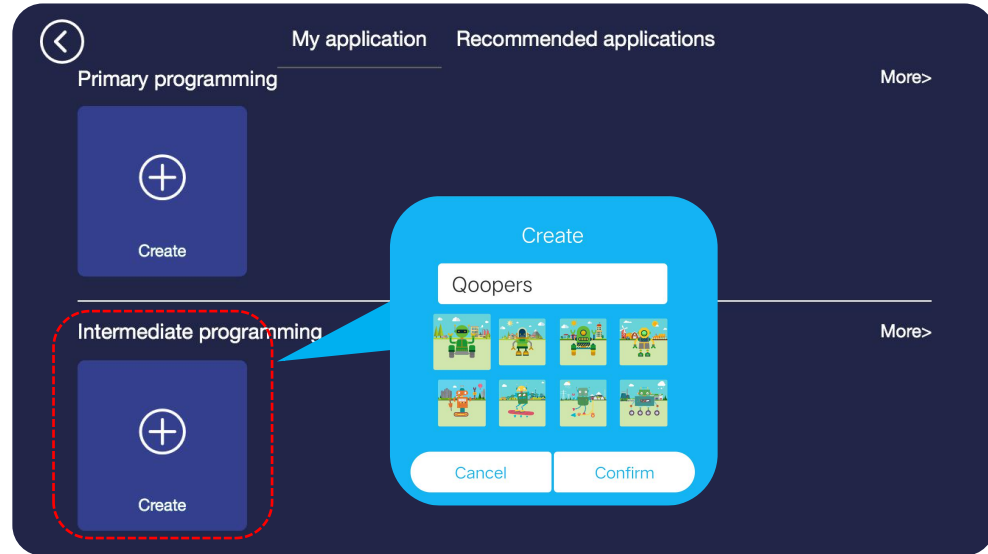
Let us explore how Captain Alloy leave there safely?

# Knowledge explanation

Programming:

1.turn on programming application of mobile phone；

2.Click on the icon of "my application；

3.Choose "create" in intermediate programming, and named the application.

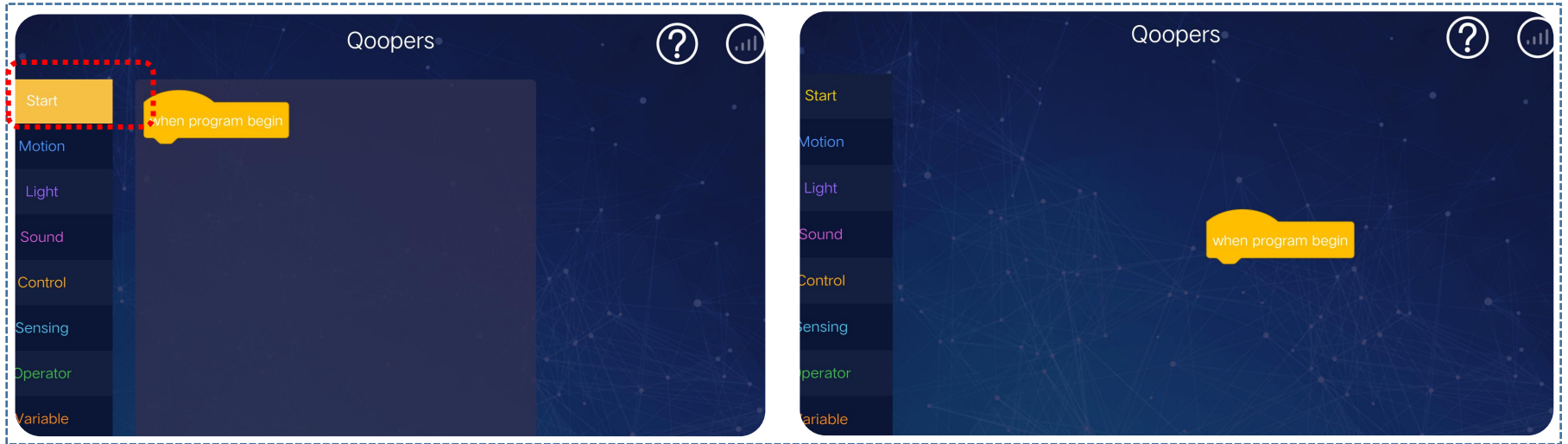# Knowledge explanation

Interface of intermediate programming:

1.Click the icon of creating Qoopers；

2.Programming interface includes programming area, icon module area, bluetooth area, operation icon, tool icon.
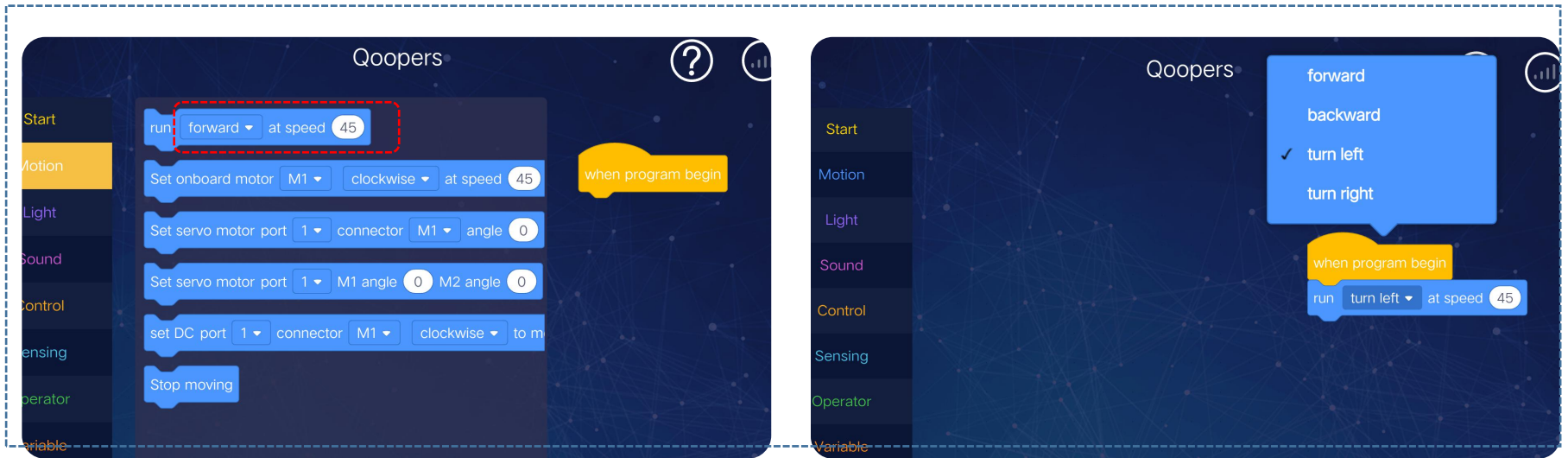
# Knowledge explanation
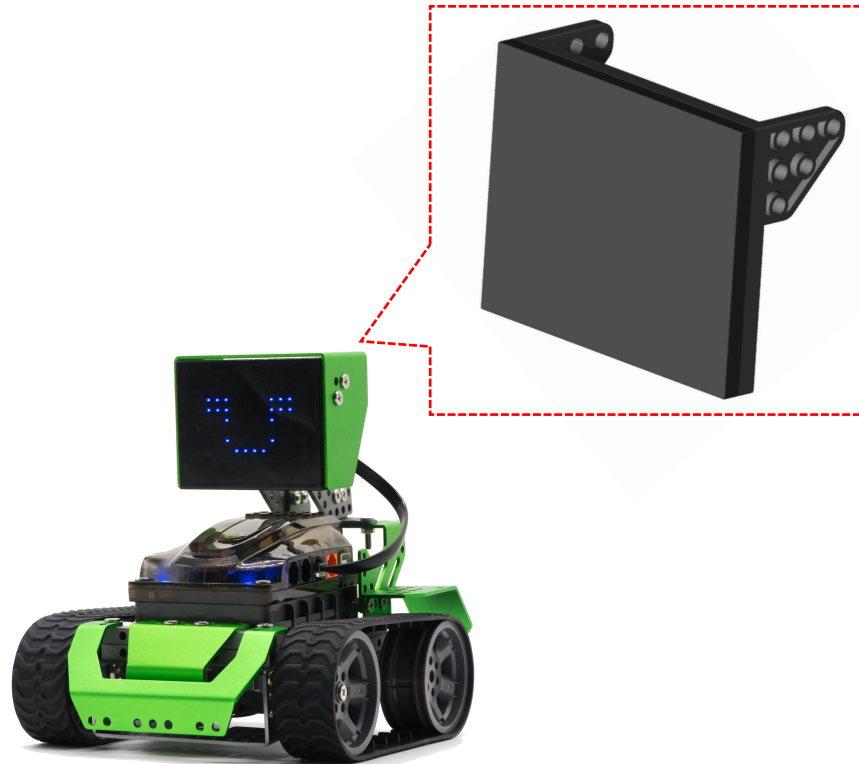
Learn about start module：

Every part procedure only have one start icon, which is the necessary icon for every procedure; click on start module, drag icon of "when program start" to programming area with fingers.

# Programming

The leaving route achieved by going straight and turning of Captain Alloy

In programming，choose [ run forward ▼ at speed 45 ] in the motion module，

drag into programming area, setting direction and speed of motion.
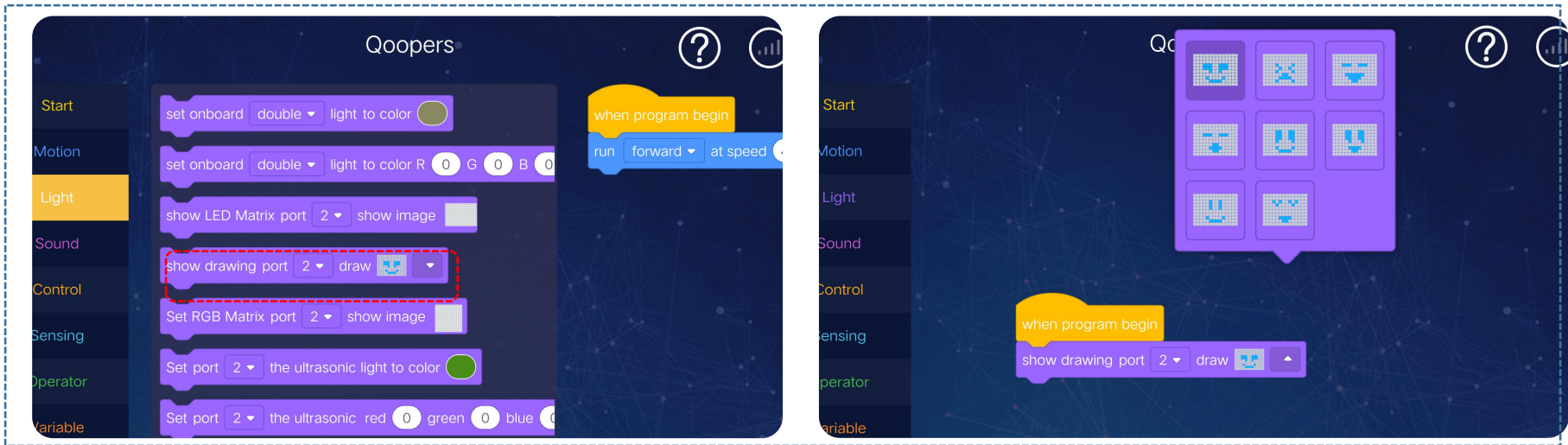
LED matrix screen consists of 140 LED lights, according to signal, LED light on matrix screen will shining or not shining when use connection line to connect mainboard and the port of LED matrix screen, and it will appear pattern that you want obeying changes of command.
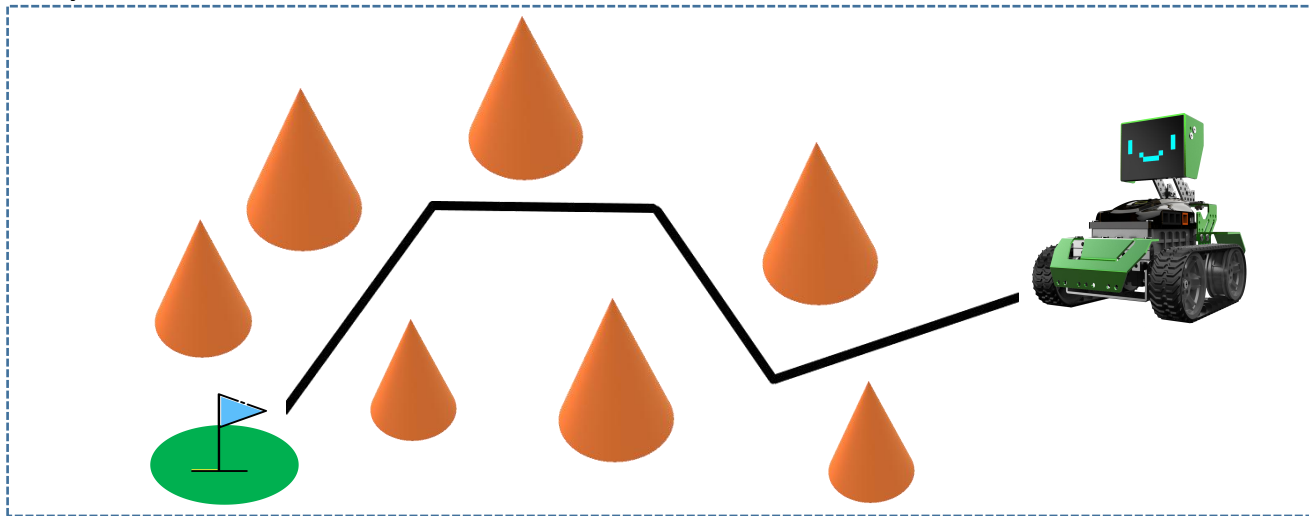
# Programming

Choose [ 

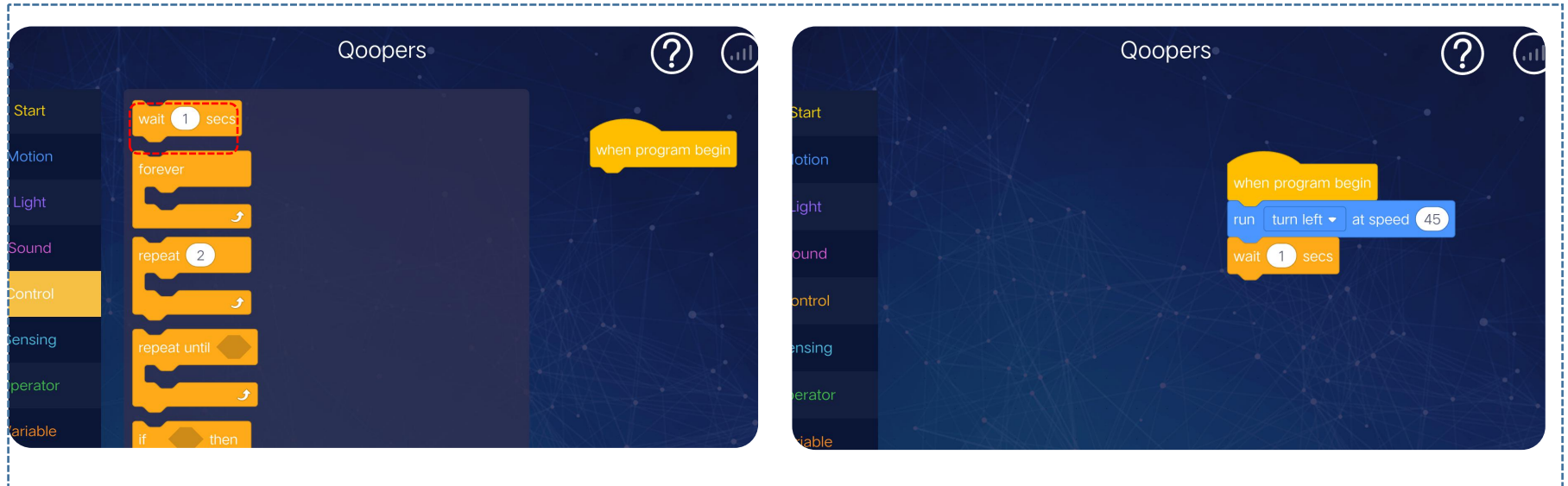light module，drag into programming area, setting connection port and display icon of LED matrix screen.

# Programming

Task requirements：After Captain Alloy set out from beginning, it will move forward or turning to reach safe area according to route direction, finally it will appear pattern of happy on LED matrix screen.

Route indication, Captain Alloy need to go through the process of advancing-turning right- advancing-turning left-advancing-turning left-advancing, finally leave safely.
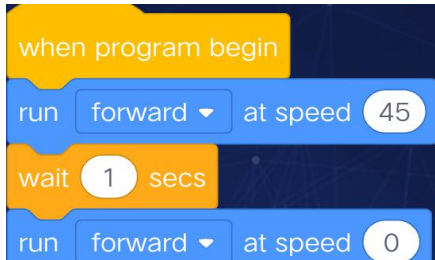
# Programming

In programming, choose control module， and drag.
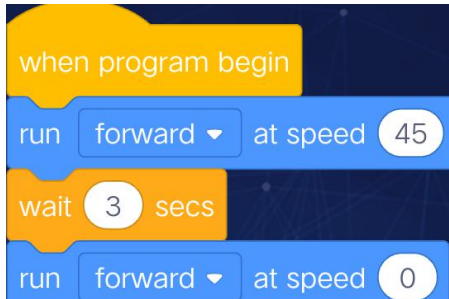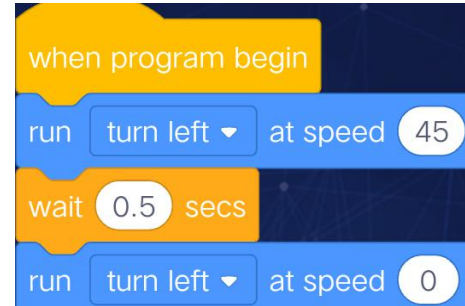into program area. Click on icon figure to set time span with seconds.

# Programming

It need to be noticed that control Captain Alloy's advancing distance and turning angle with time，the more time uses, the farther Captain Alloy advance and the larger turning angle would be.
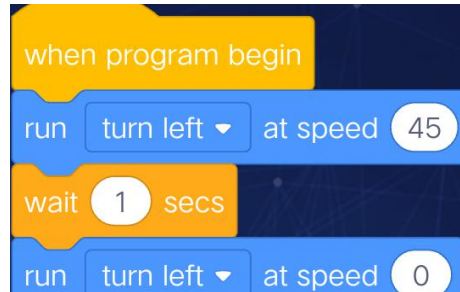
# Programming

```
when program begin
run    turn left ▾    at speed  45
wait   1   secs
run    turn right ▾   at speed  45
wait  0.5  secs
run    forward ▾      at speed  45
wait   1   secs
run    turn left ▾    at speed  45
wait  0.7  secs
run    forward ▾      at speed  45
wait   1   secs
run    turn left ▾    at speed  45
wait  0.7  secs
run    forward ▾      at speed  45
wait   1   secs
run    forward ▾      at speed   0
show drawing  port2 ▾  draw  ▾
```

Programming on the basis of Captain Alloy's route, in actual operation, it can debug the time of advancing and turning according to different fields.

After programming, connect Captain Alloy with bluetooth, pressing operation button to control its action to leave the dangerous volcano group.

# Programming

In addition to writing procedure to control action，Qoopers have another function that remote control Qoopers' action.
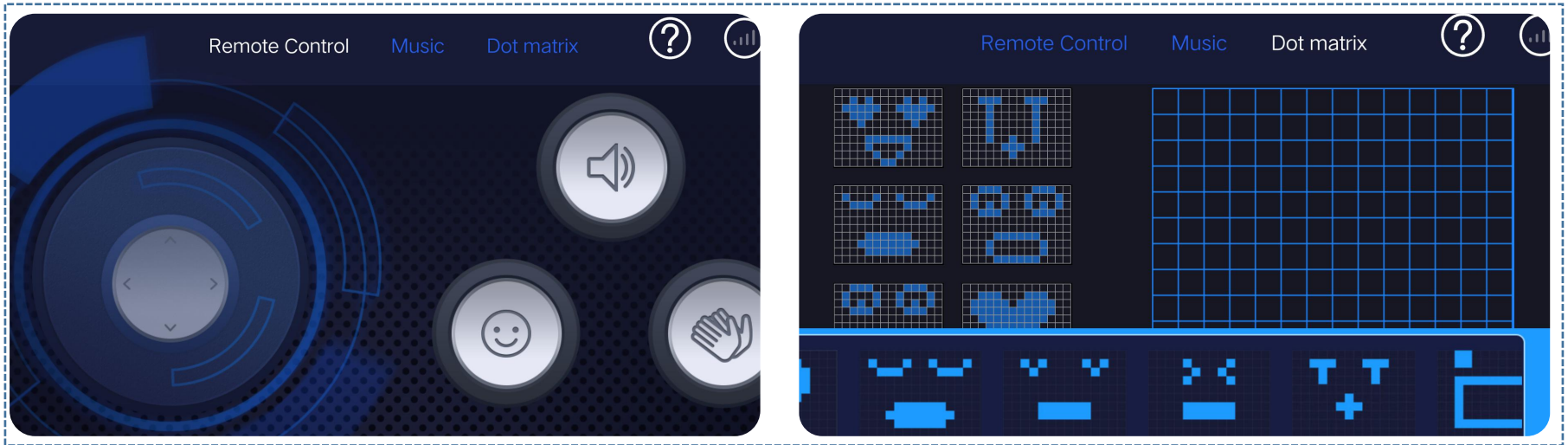
In application interface, click on icon of "Qoopers" and choose Captain Alloy.

# Extends

Under remote control model, left screen could directly control the action of Captain Alloy, right button could change the pattern of LED matrix screen;

It can use diverse brow and custom brow, dynamic brow in dot screen model.

# Extends

The usage prerequisite of remote control model and matrix screen model of Captain Alloy is that connect bluetooth.

After connect successfully, using new skill of Captain Alloy control it to leave volcano group.

# Summary and rethink

1. In programming, do you have any other ideas that could change pattern of matrix screen?
2. Are your procedure helped Captain Alloy leaving volcano group at the end?

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