



刮住學

初中編程體驗比賽

Scratch 編程工作坊(2)

Platform Game

平台遊戲



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Christian Alliance
Cheng Wing Gee College

A. Create a new sprite

1. Click on **Upload Sprite from file.** (上傳角色檔案)

Player Sprite	Sensor Sprite	Background
mario.png	leftHitTest.png rightHitTest.png topHitTest.png bottomHitTest.png	map0_0.png map0_1.png map1_0.png map1_1.png



B. Map Sprites

2. Click on **map0_0** and add the script on the right.



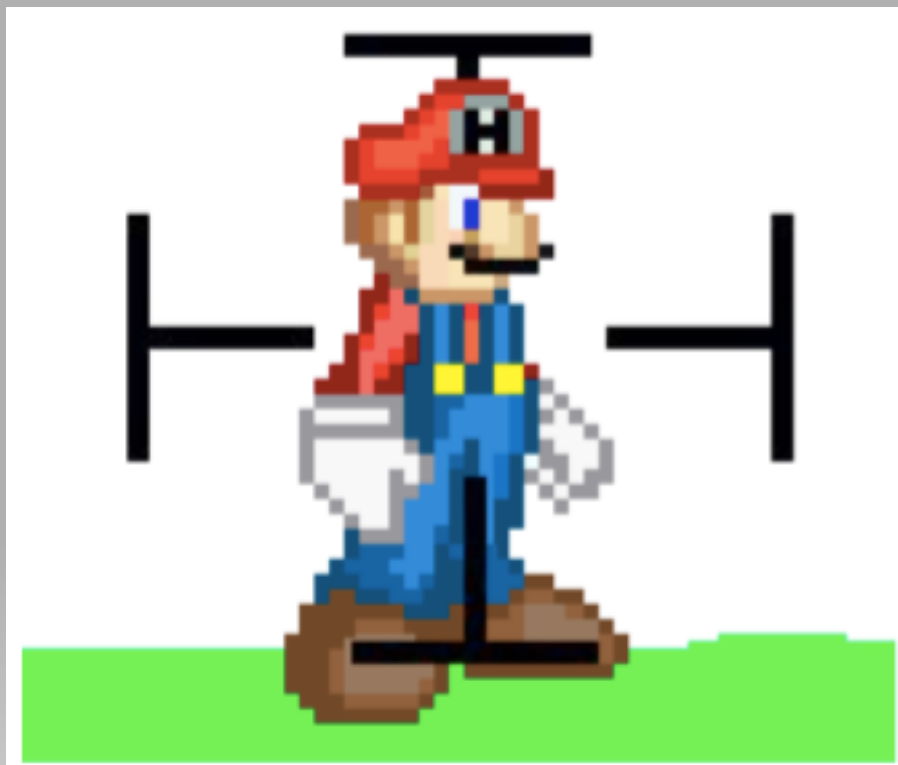
B. Map Sprites

In general, the map sprite that is **x screens to the right** of the center sprite and **y screens above** the center sprite is called **map_x_y** in this example

0,2	1,2	2,2
0,1	1,1	1,2
0,0	0,1	0,2



C. Sensor Sprites



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C. Sensor Sprites

Coding

- Local variable:
 - hitTest



```
when green flag clicked
  set ghost effect to 100
  forever loop
    go to player
    if touching color green? then
      set hitTest to 1
    else
      set hitTest to 0
```

The image shows a Scratch script for a sensor sprite. It starts with a 'when green flag clicked' event block. This is followed by a 'set ghost effect to 100' block. A 'forever' loop contains three main blocks: a 'go to player' block, an 'if touching color green?' block, and two 'set hitTest to' blocks. The 'if' block has a 'then' branch that sets 'hitTest' to 1, and an 'else' branch that sets 'hitTest' to 0. The loop ends with a return arrow block.



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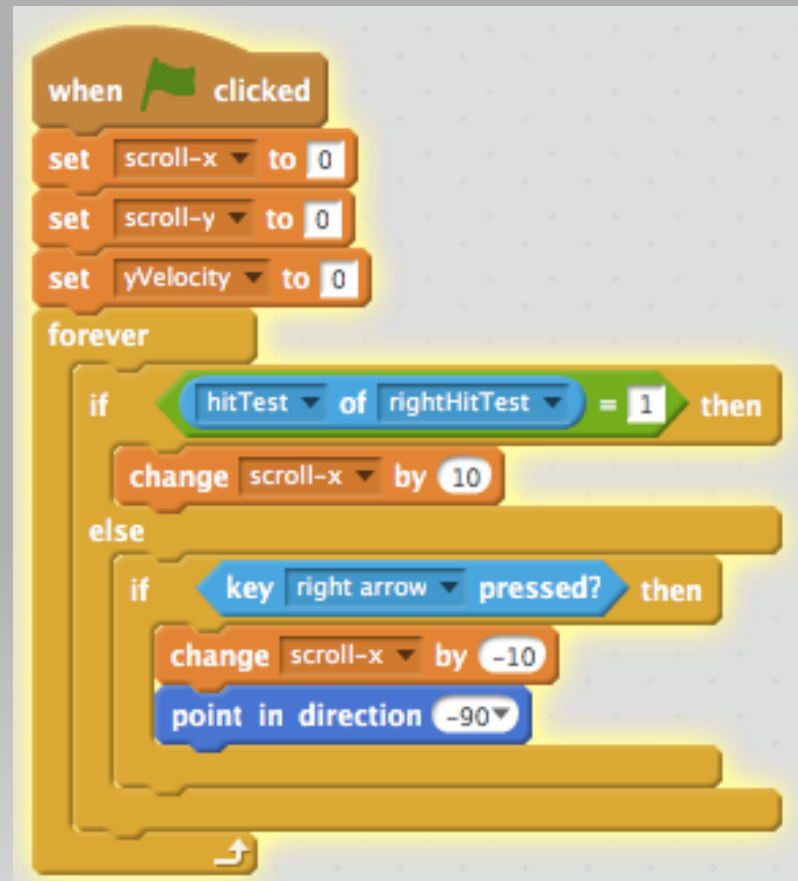


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D. Player Sprite

- Global variables:
 - scroll-x
 - scroll-y
 - yVelocity
- Move to the Right...
- How to move to the Left?



```
when green flag clicked
  set scroll-x to 0
  set scroll-y to 0
  set yVelocity to 0
  forever loop
    if hitTest of rightHitTest = 1 then
      change scroll-x by 10
    else
      if key right arrow pressed? then
        change scroll-x by -10
        point in direction -90
```

D. Player Sprite

- Move to the Top & Bottom...
- How to deal with Gravity?



```
if touching color [red] ? then
  set yVelocity to 1
  if key [up arrow] pressed? then
    set yVelocity to 15

if hitTest of topHitTest = 1 then
  set yVelocity to -3
  change scrollY by 3

if hitTest of bottomHitTest = 1 then
  change scrollY by -5

change yVelocity by -1
change scrollY by yVelocity * -1
```

The image shows a Scratch script for a player sprite. It starts with an 'if touching color [red] ?' block. Inside this block, there is a 'set yVelocity to 1' block, followed by an 'if key [up arrow] pressed?' block. Inside the 'up arrow' block, there is a 'set yVelocity to 15' block. Below the first 'if' block, there is an 'if hitTest of topHitTest = 1' block. Inside this block, there is a 'set yVelocity to -3' block and a 'change scrollY by 3' block. Below that is an 'if hitTest of bottomHitTest = 1' block. Inside this block, there is a 'change scrollY by -5' block. Finally, there are two 'change' blocks: 'change yVelocity by -1' and 'change scrollY by yVelocity * -1'. The script ends with a 'return to start' block.



Reference

- Scrolling Platformer Tutorial - Scratch Wiki
[https://wiki.scratch.mit.edu/wiki/
Scrolling_Platformer_Tutorial](https://wiki.scratch.mit.edu/wiki/Scrolling_Platformer_Tutorial)



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