小丑魚找朋友

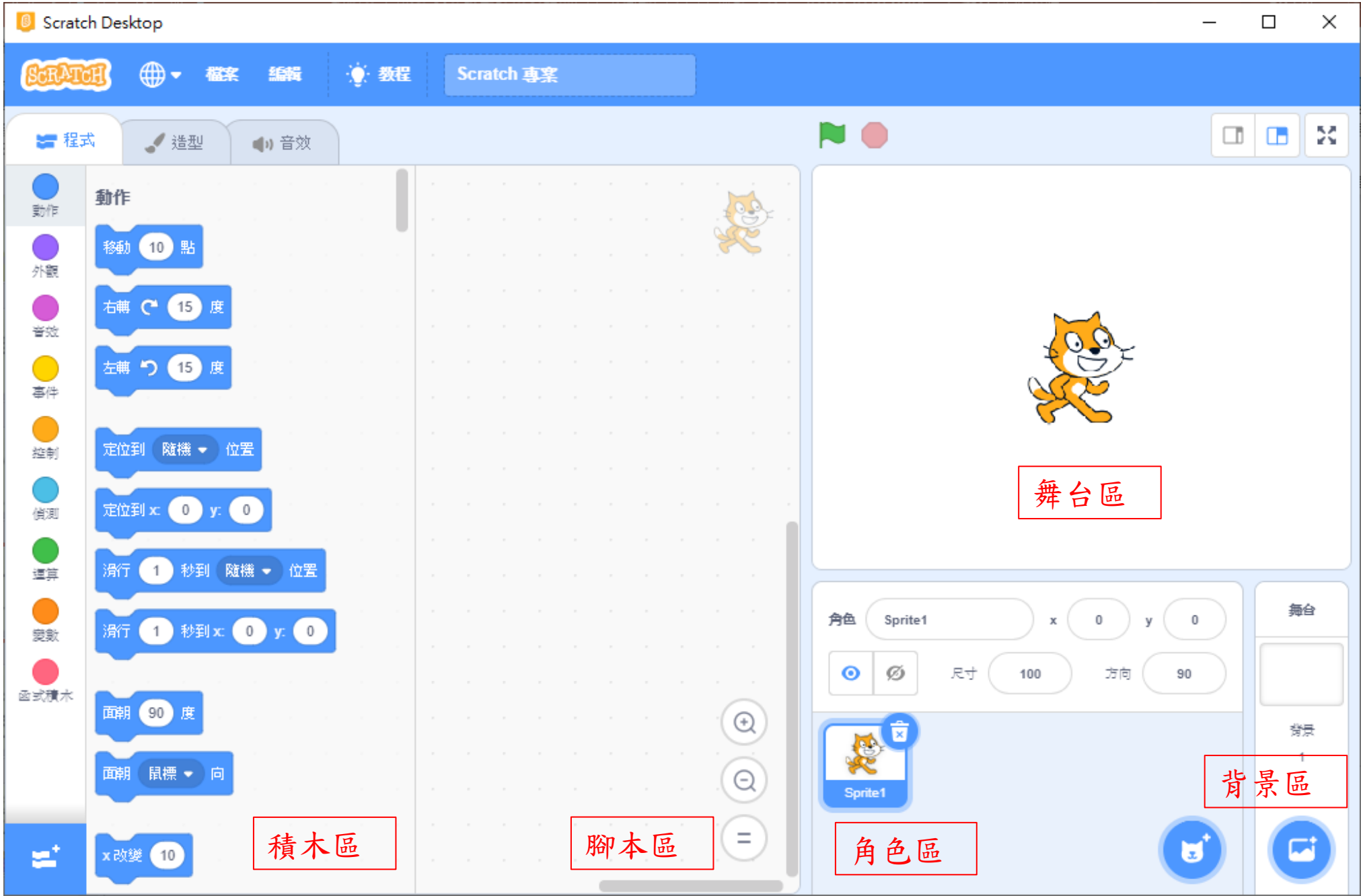
主角:小丑魚

運算思維

- 已經學過 Scratch 為何還要學一次。學習Scratch不是只有學習程式設計，還可以學習電腦科學家的思考方式。
- 遇到問題時，如何拆解與分析問題。並進而解決問題。
- 運算思維有分成那些向度。如何分析問題。

Scratch 3.0

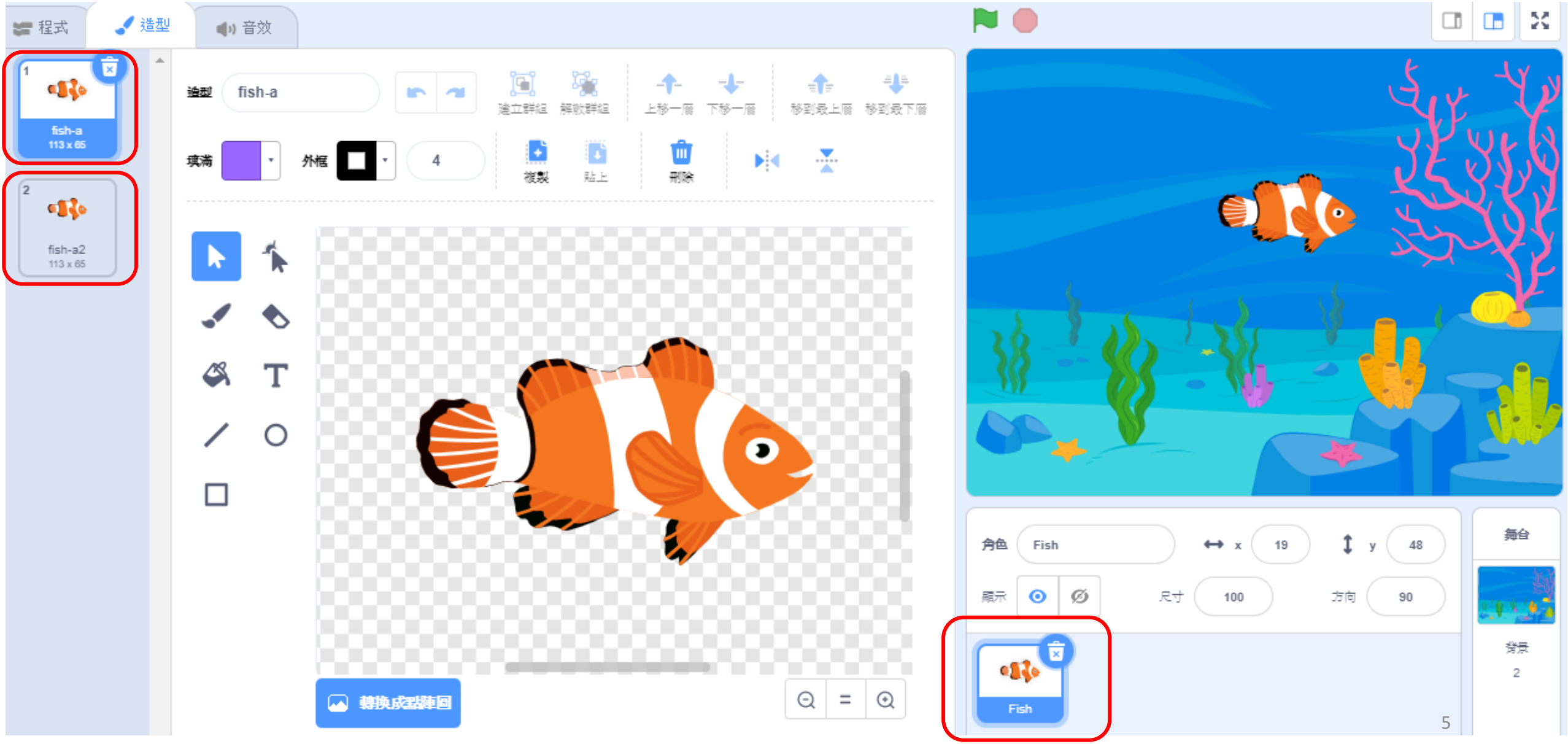
- 角色區
- 積木區
- 腳本區
- 舞台區
- 背景區



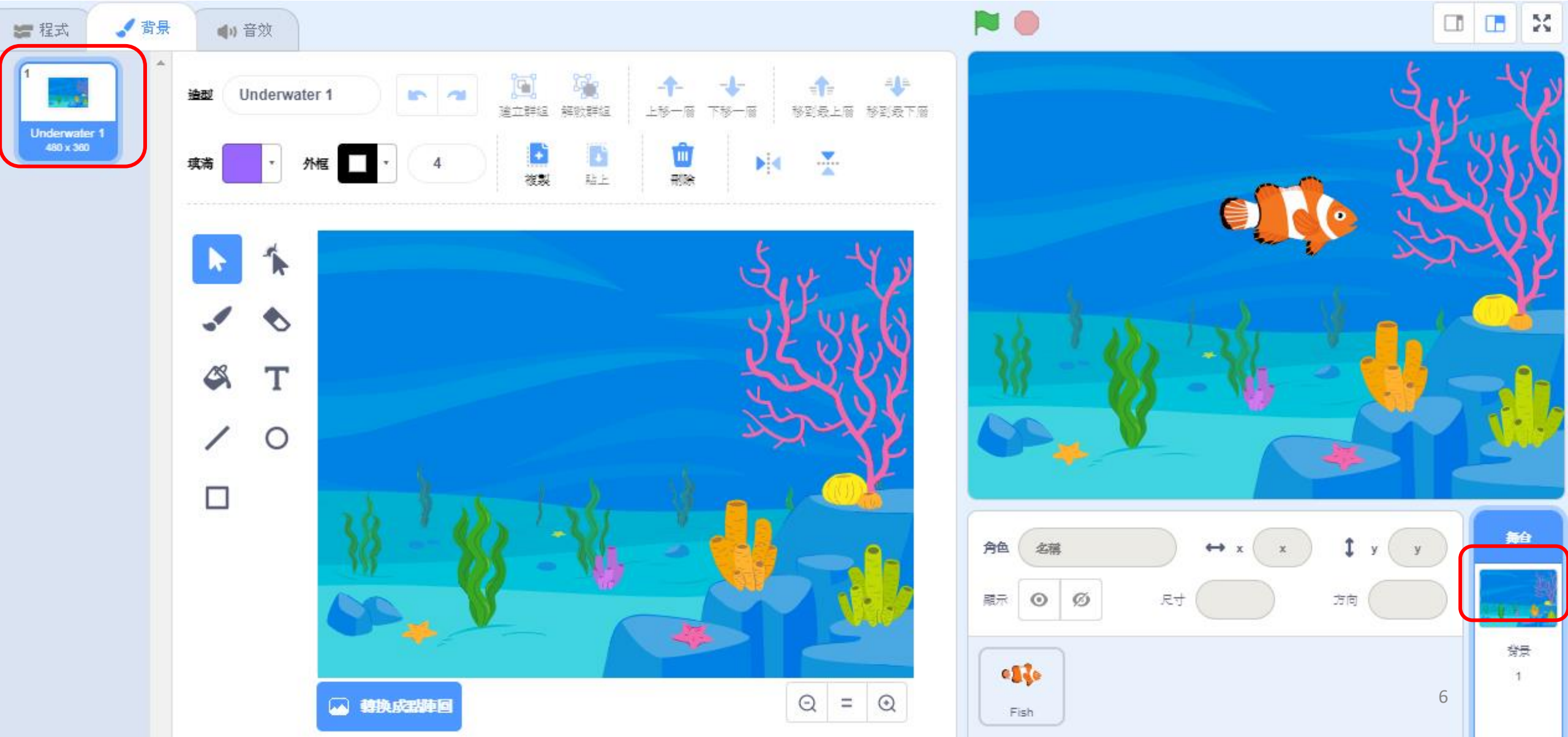
故事提要

- 幫助小丑魚尋找朋友，遊戲設計也可以以此延伸。

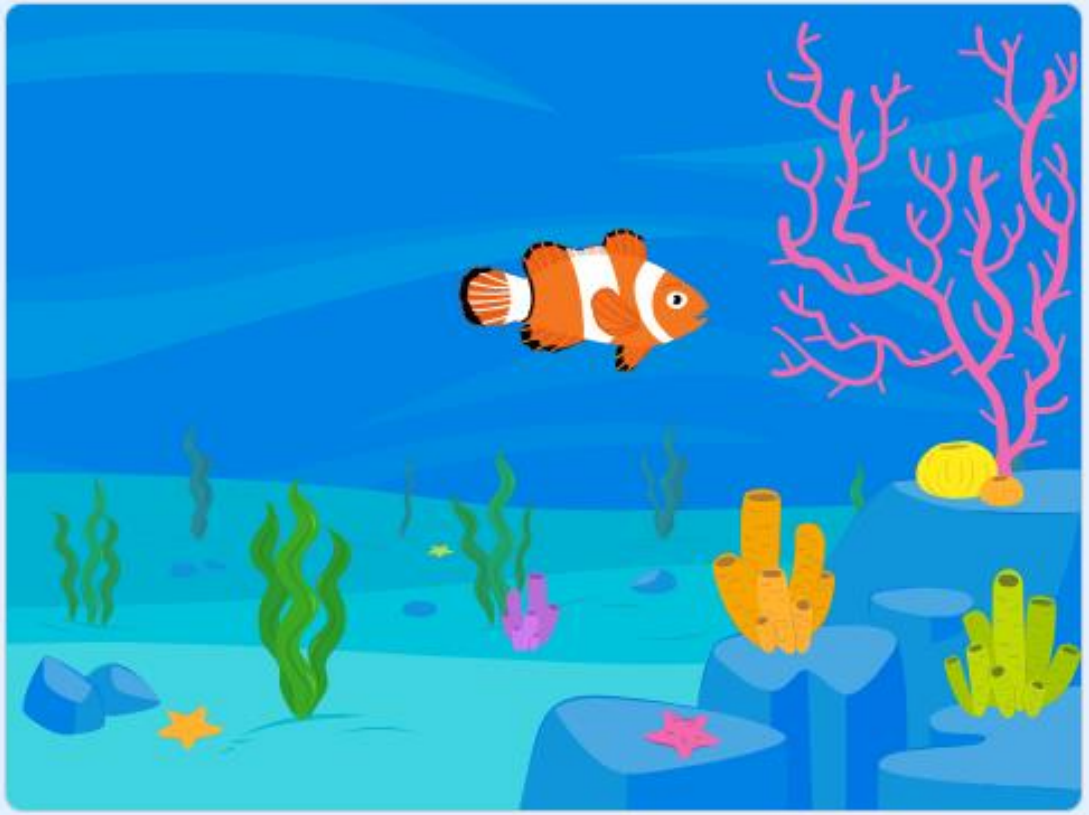
加入小丑魚角色與下一個造型

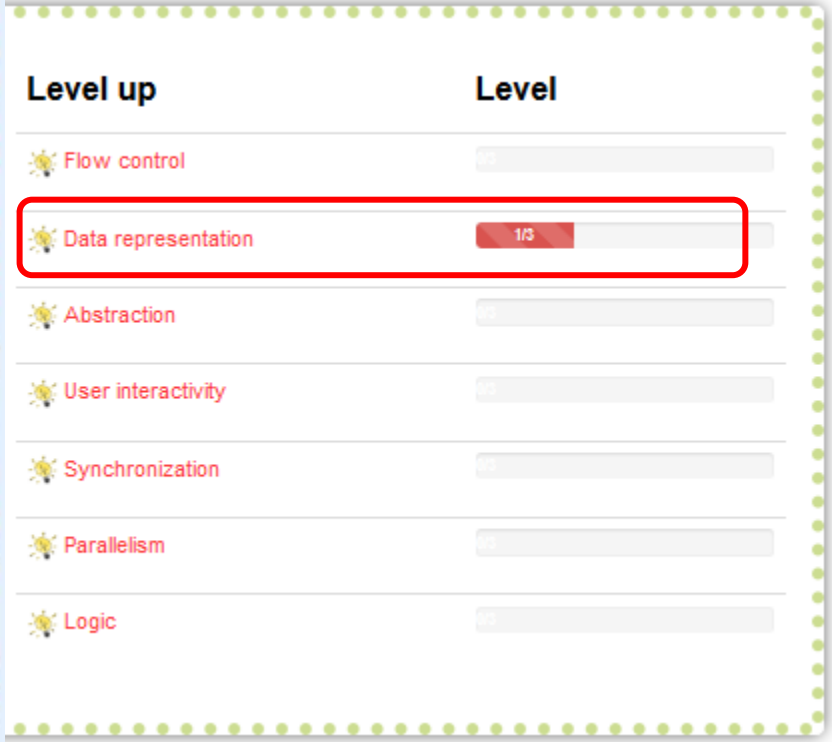


加入海底世界背景與下一個造型

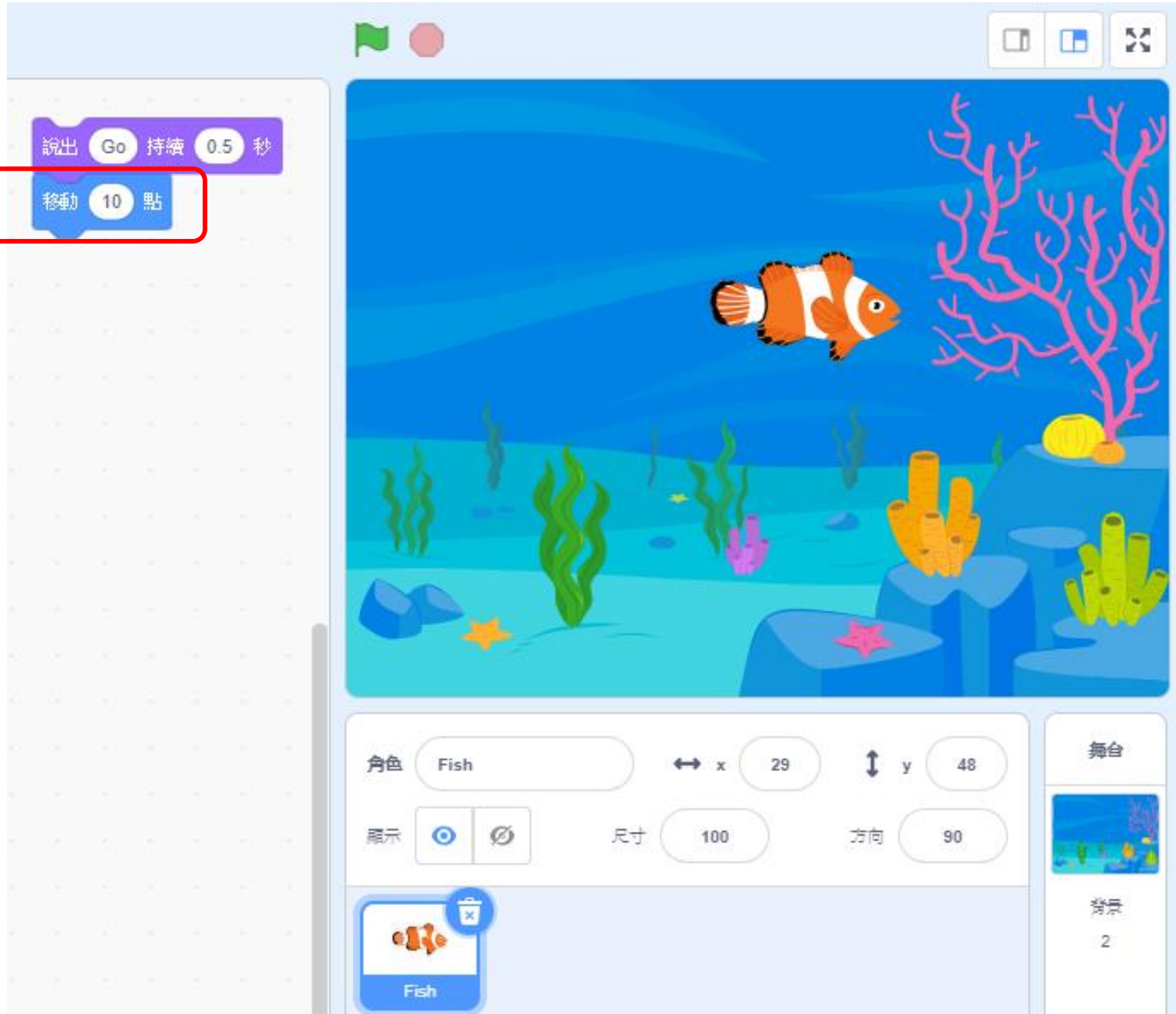


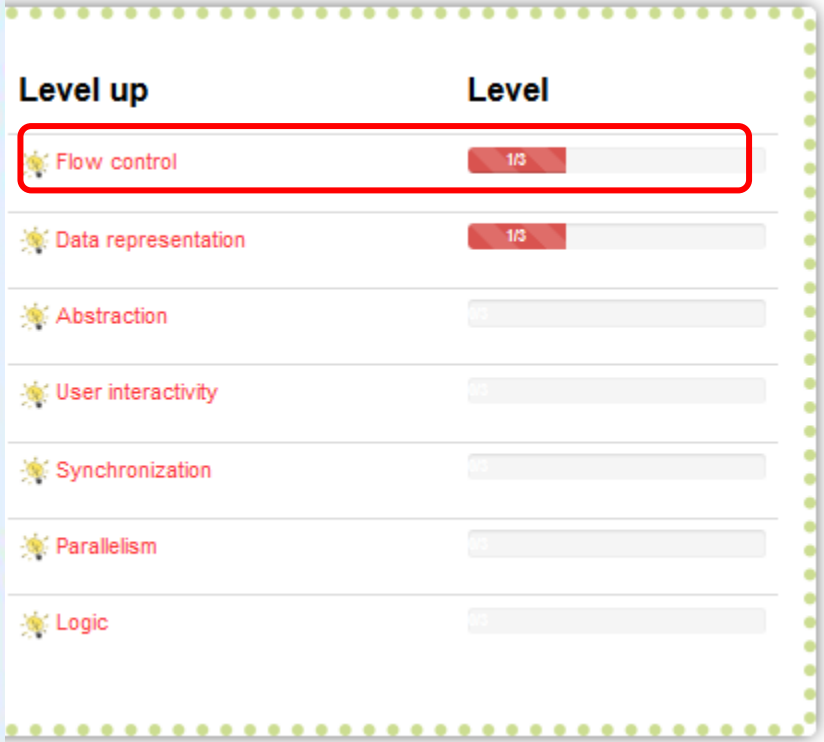
1. 資料：使用「移動」10點來找朋友



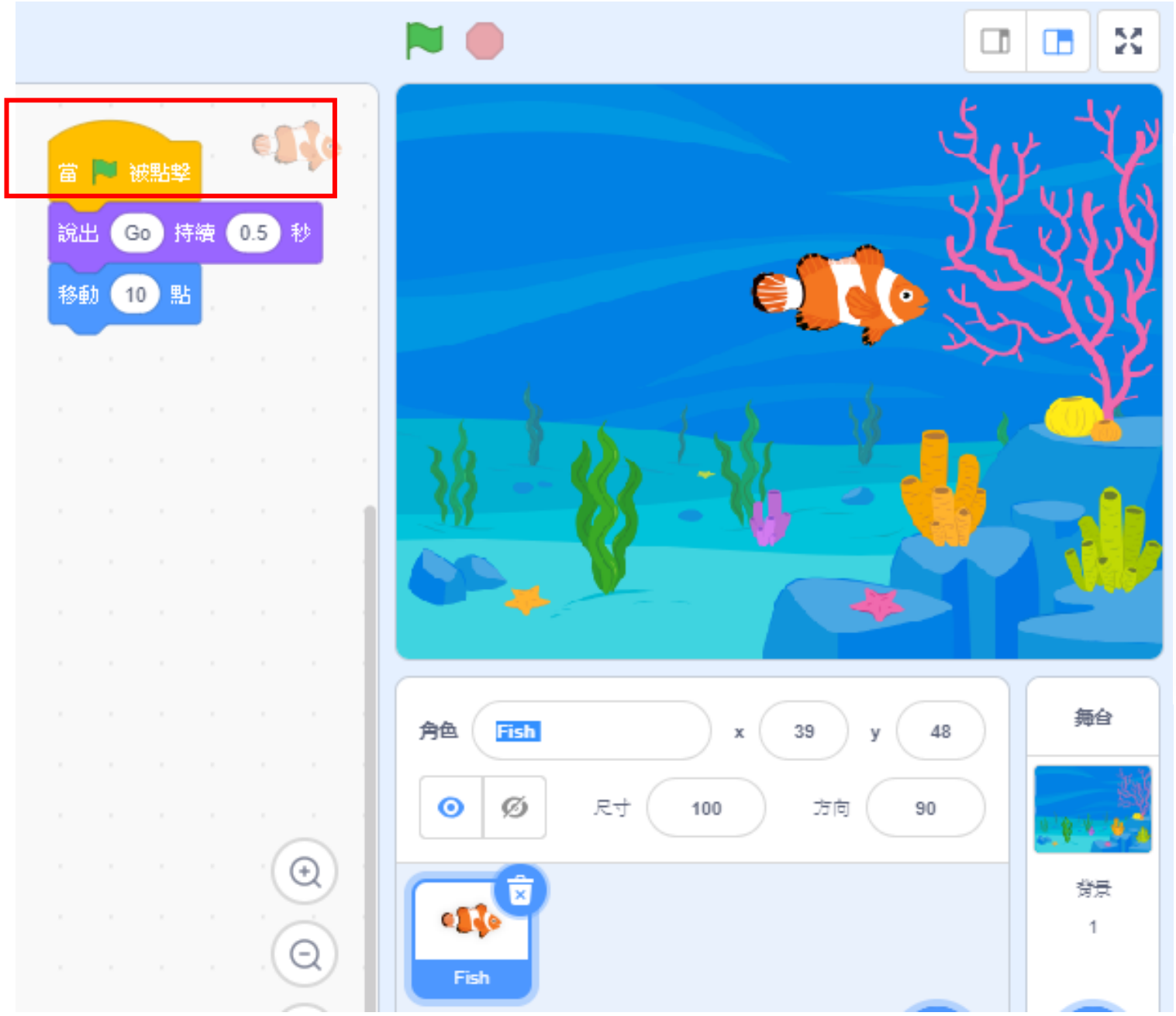


2. 流程：出發前「說出」 Go 「持續」 0.5 「秒」，讓其他小丑魚聽到



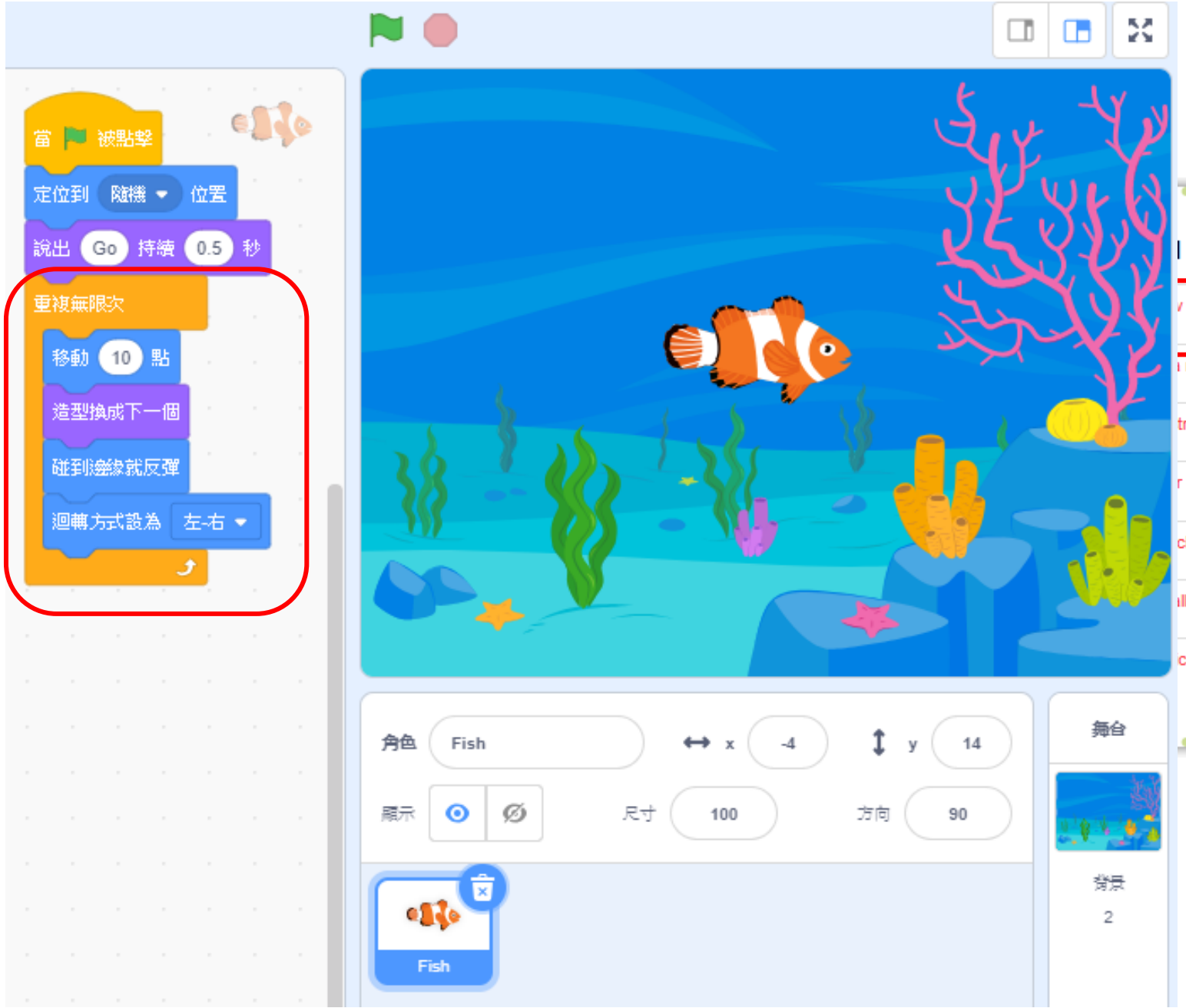


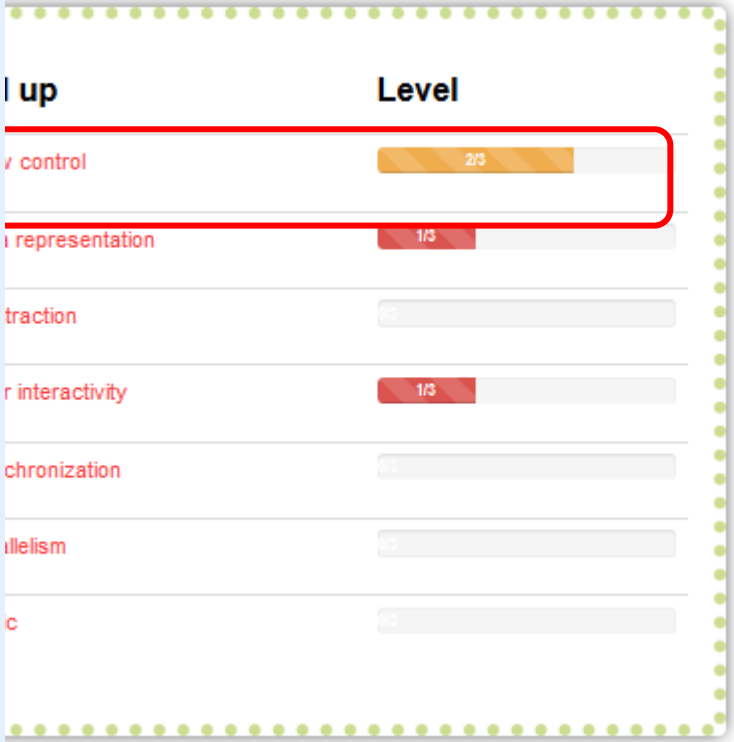
3. 人性：加入「當綠旗被點擊」，方便玩家操作



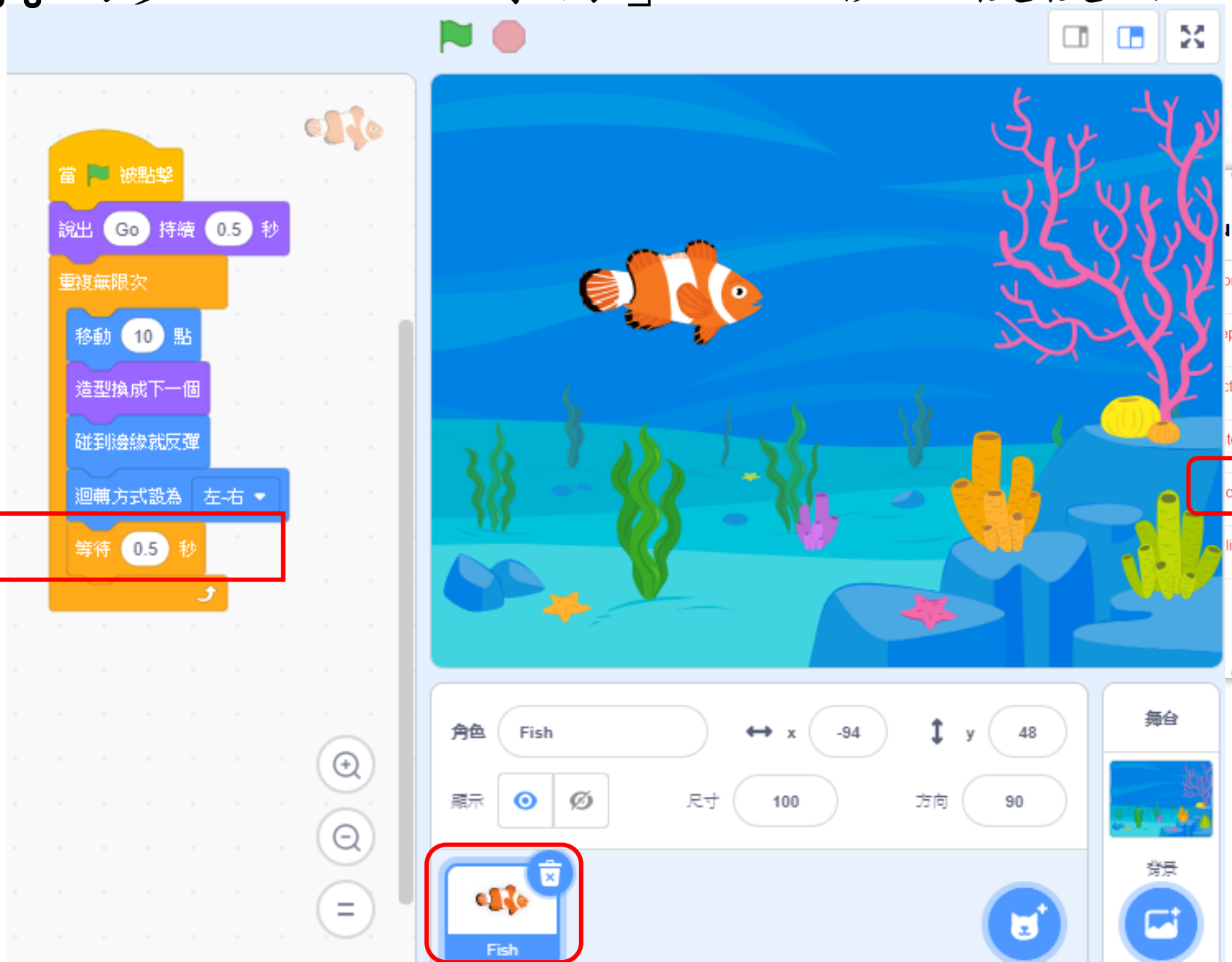
Level up	Level
Flow control	1/3
Data representation	1/3
Abstraction	
User interactivity	1/3
Synchronization	
Parallelism	
Logic	

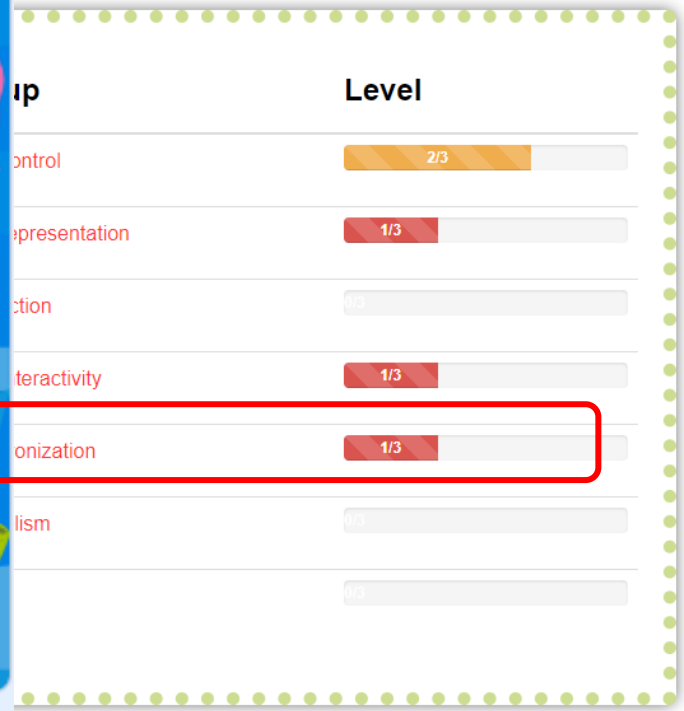
4. 流程：加入「重複無限次」等相關積木，讓小丑魚一直游



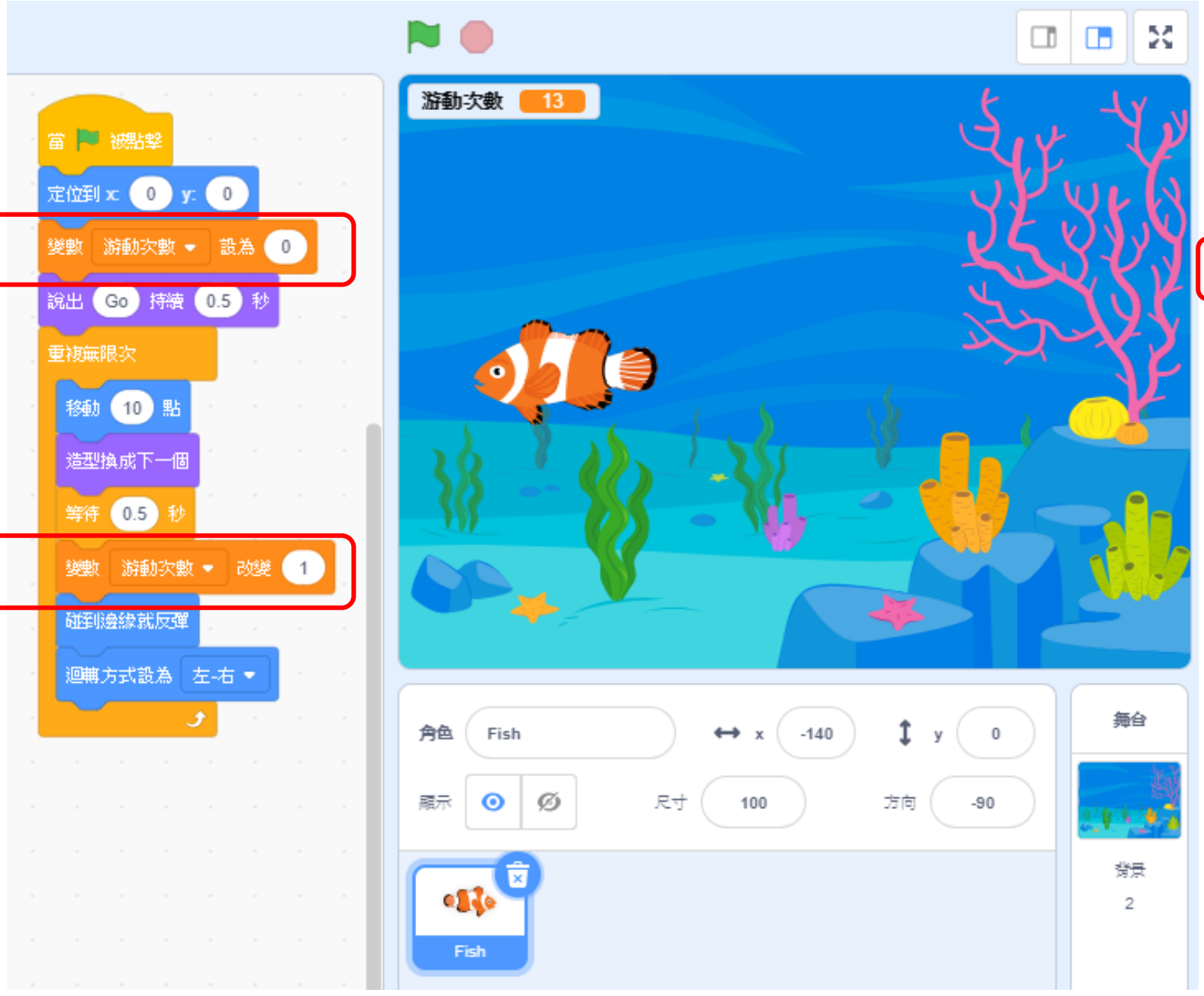


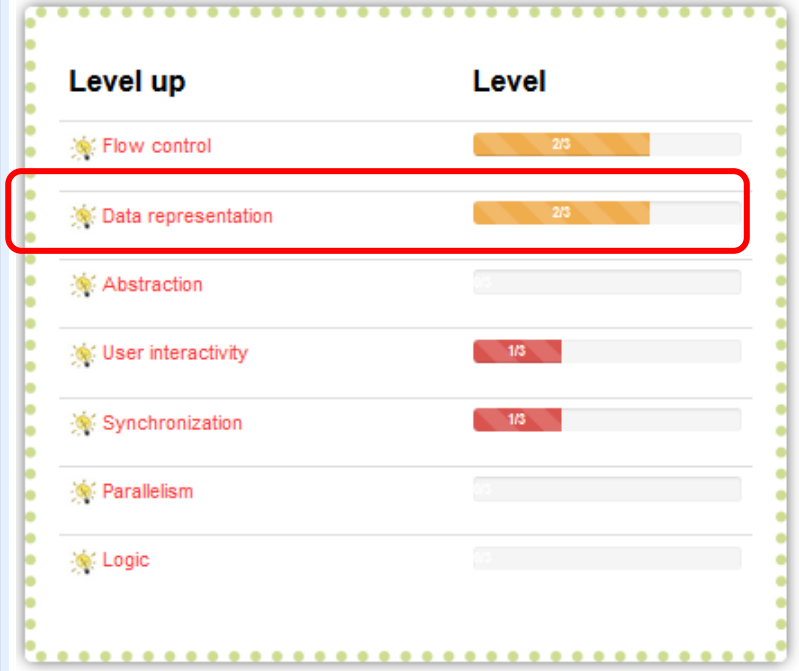
5. 同步：加入「等待」 0.5秒。慢慢游，仔細找朋友



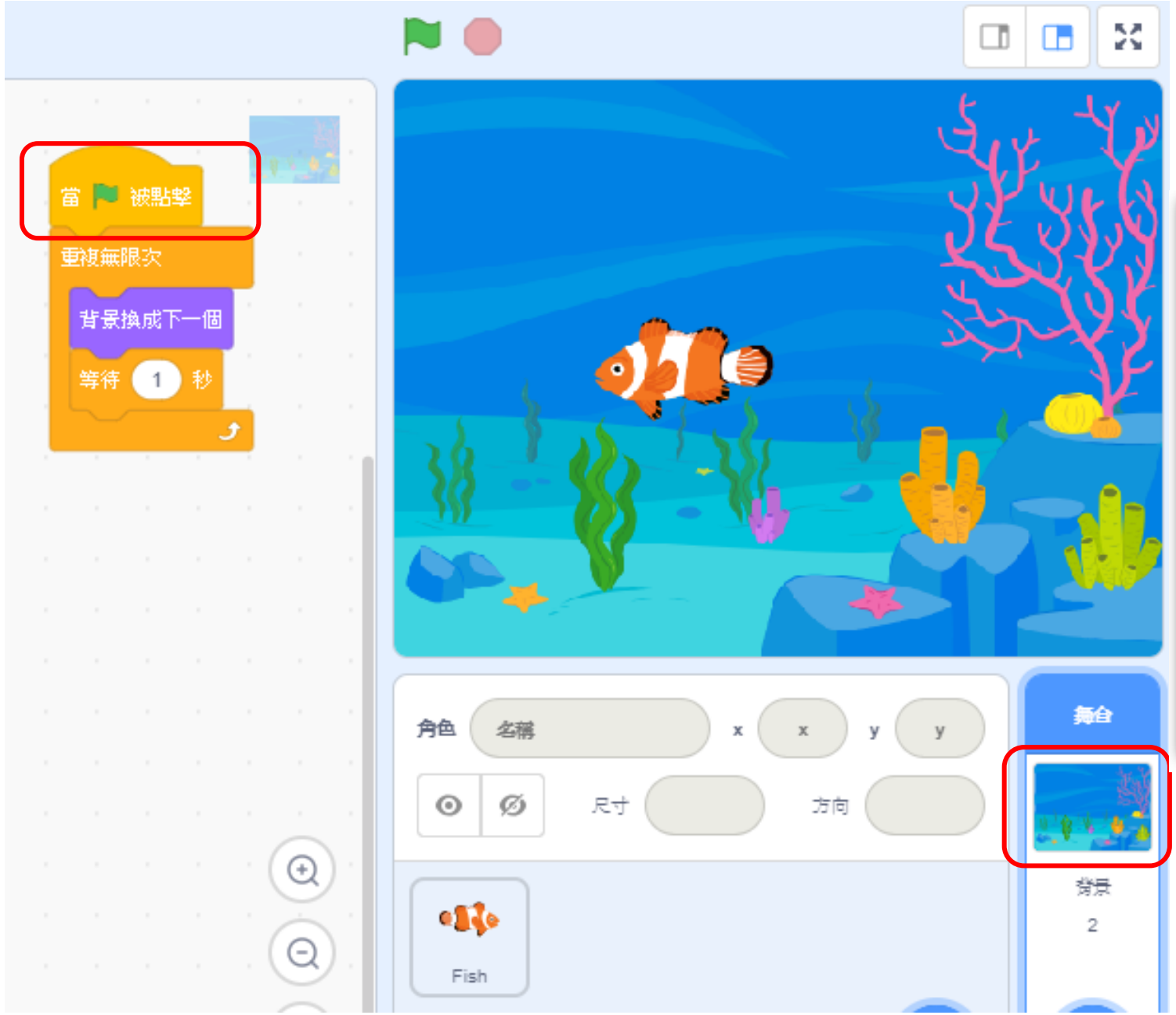


6. 資料：加入「變數」移動次數，來計算游動次數



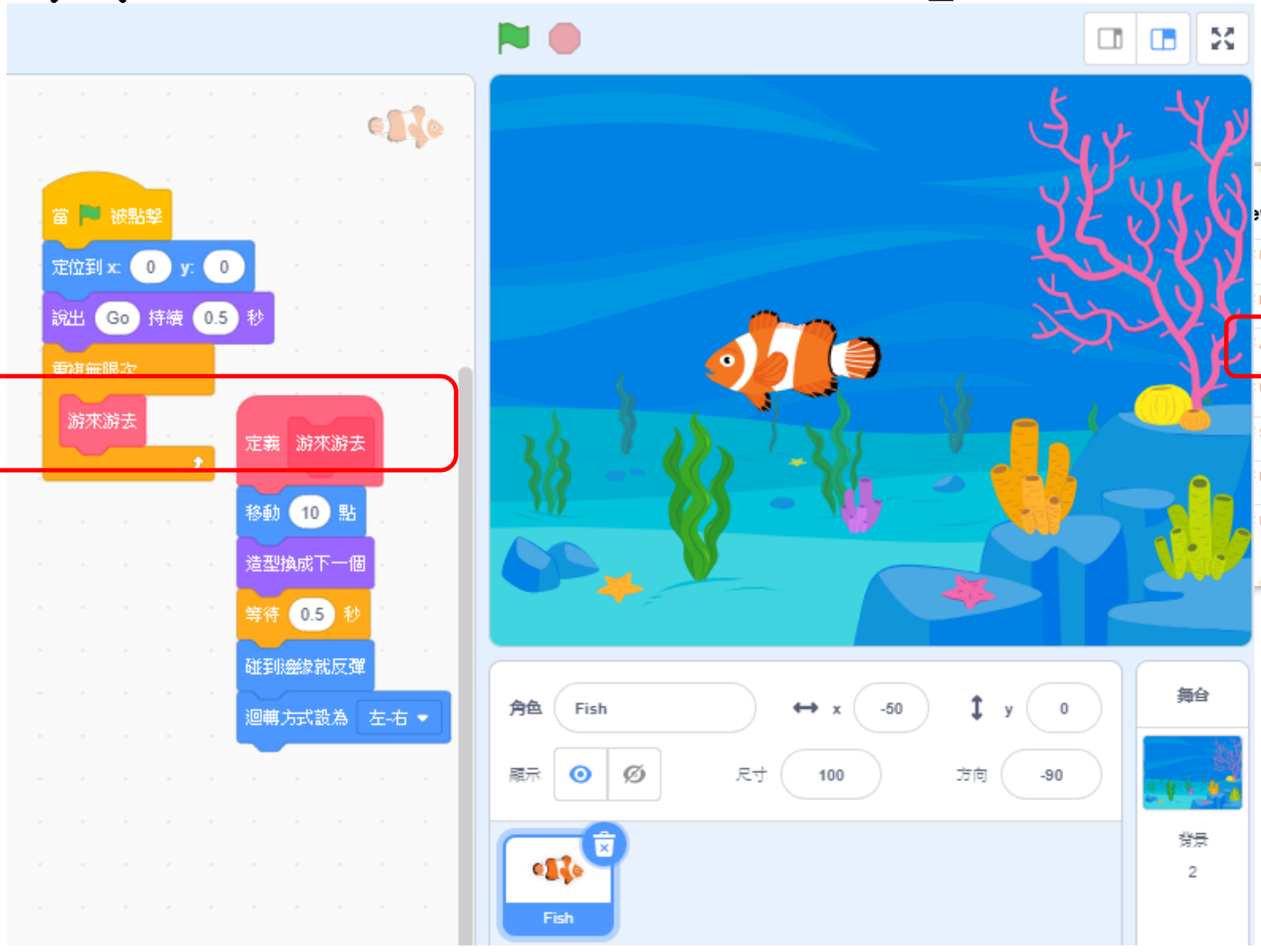


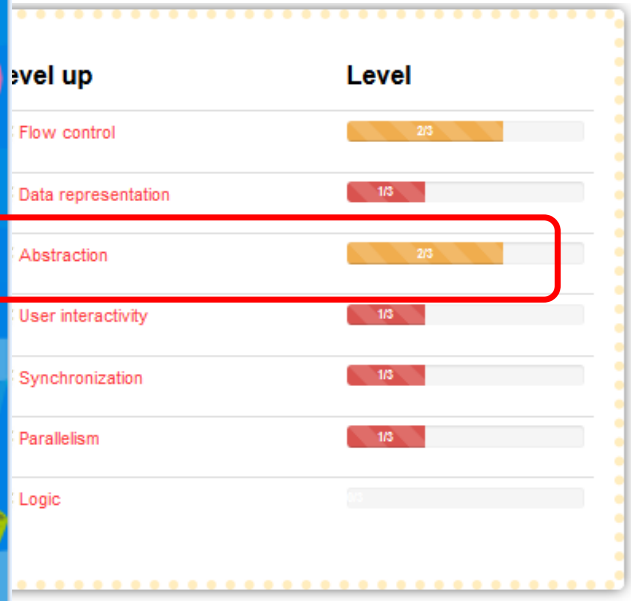
7. ✂抽象與🐙平行：使用兩個以上的「綠旗」，讓背景與小丑魚同時開始



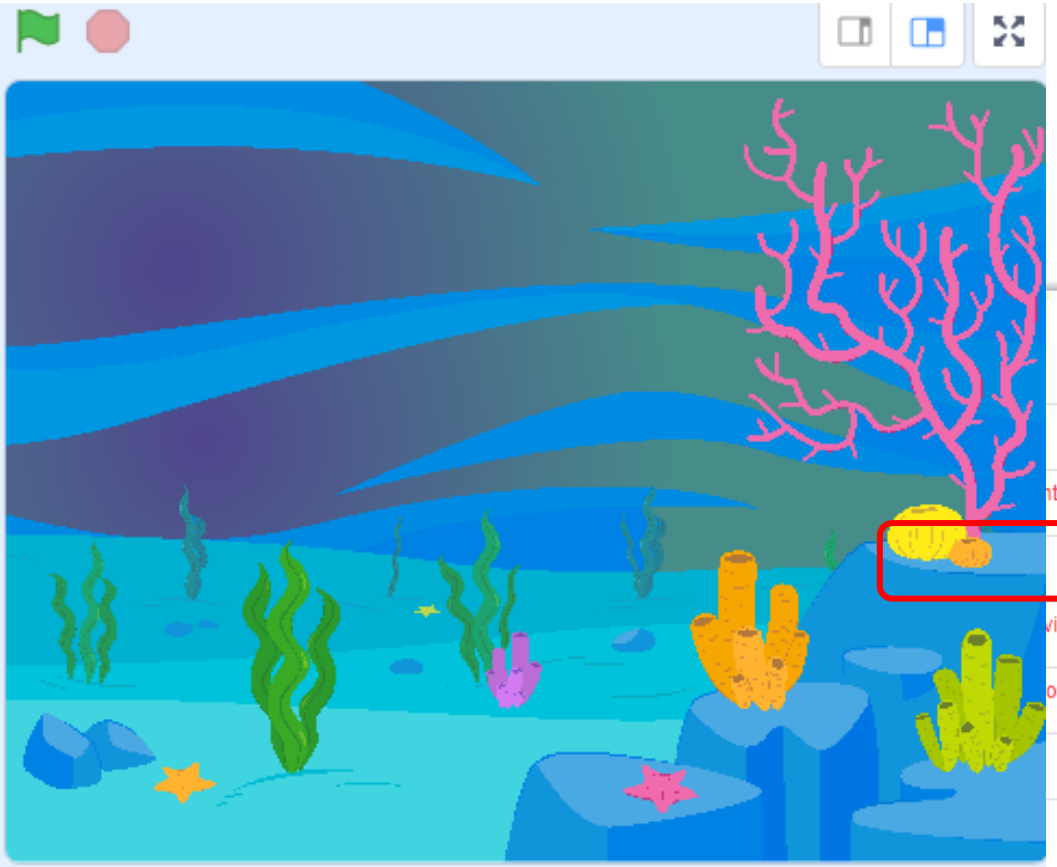
Level up	Level
Flow control	2/3
Data representation	1/3
Abstraction	1/3
User interactivity	1/3
Synchronization	1/3
Parallelism	1/3
Logic	0/3

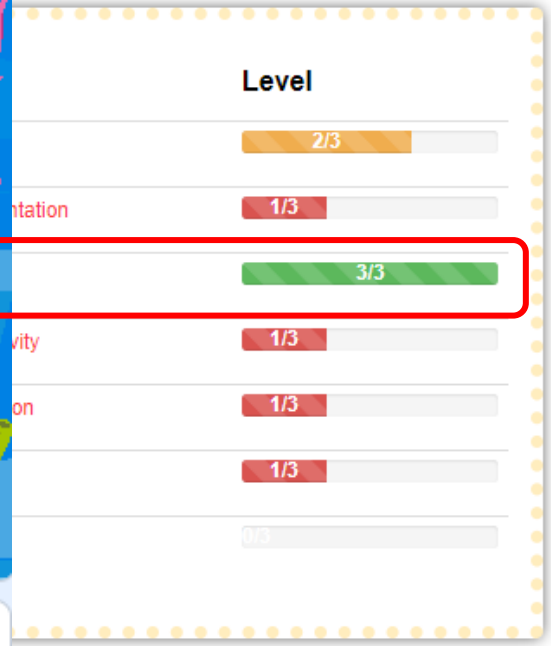
8. 抽象：使用「函式積木」。預先精簡程式碼





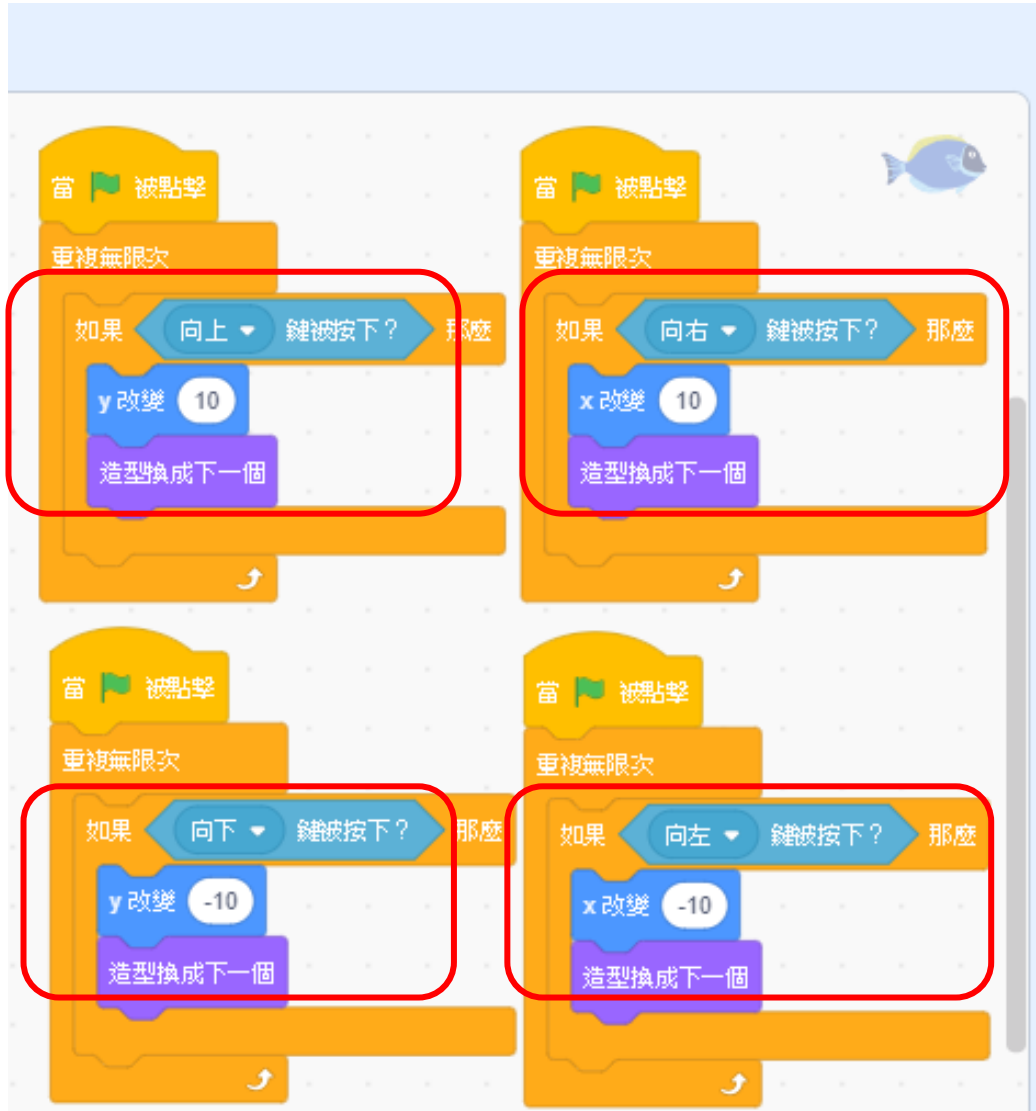
9. 抽象：找到同伴 － 當「分身」產生，有的往上有的有下

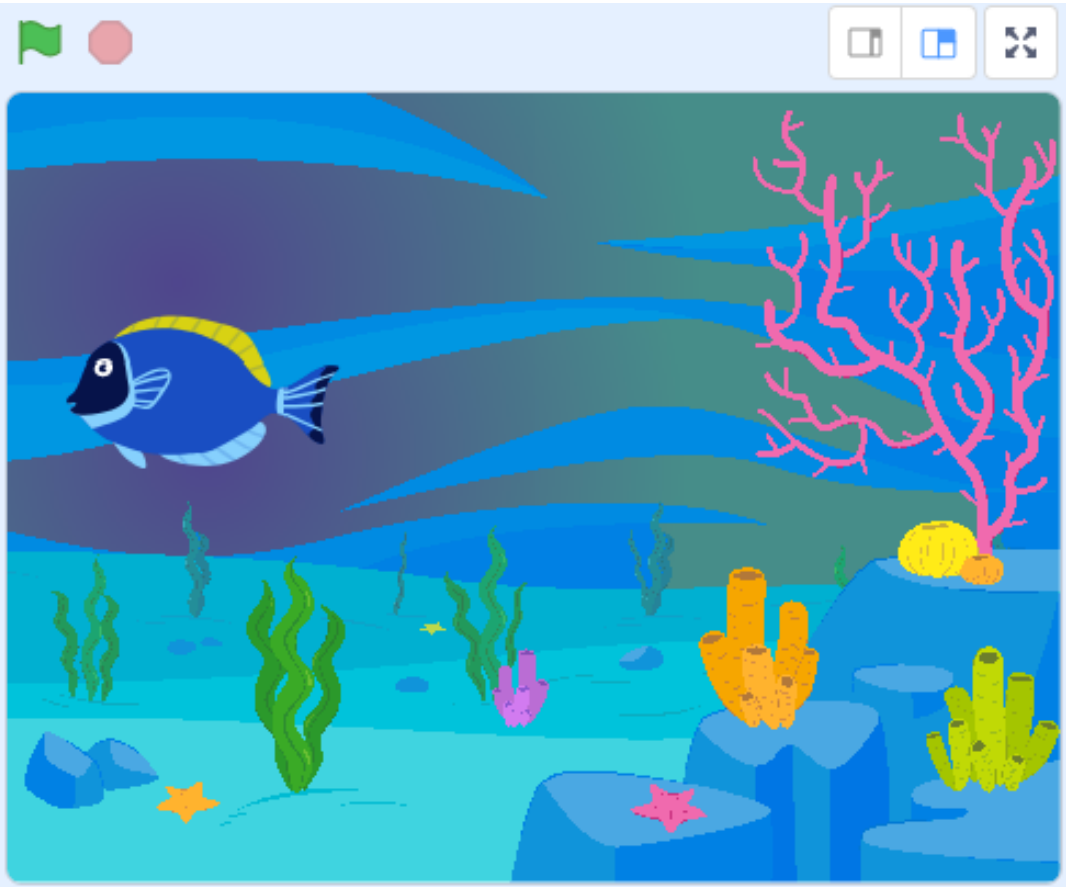


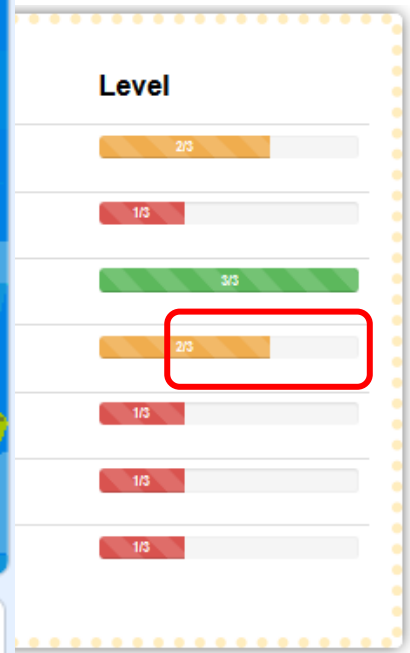


10. 邏輯：多莉出現，「如果」碰到小丑魚

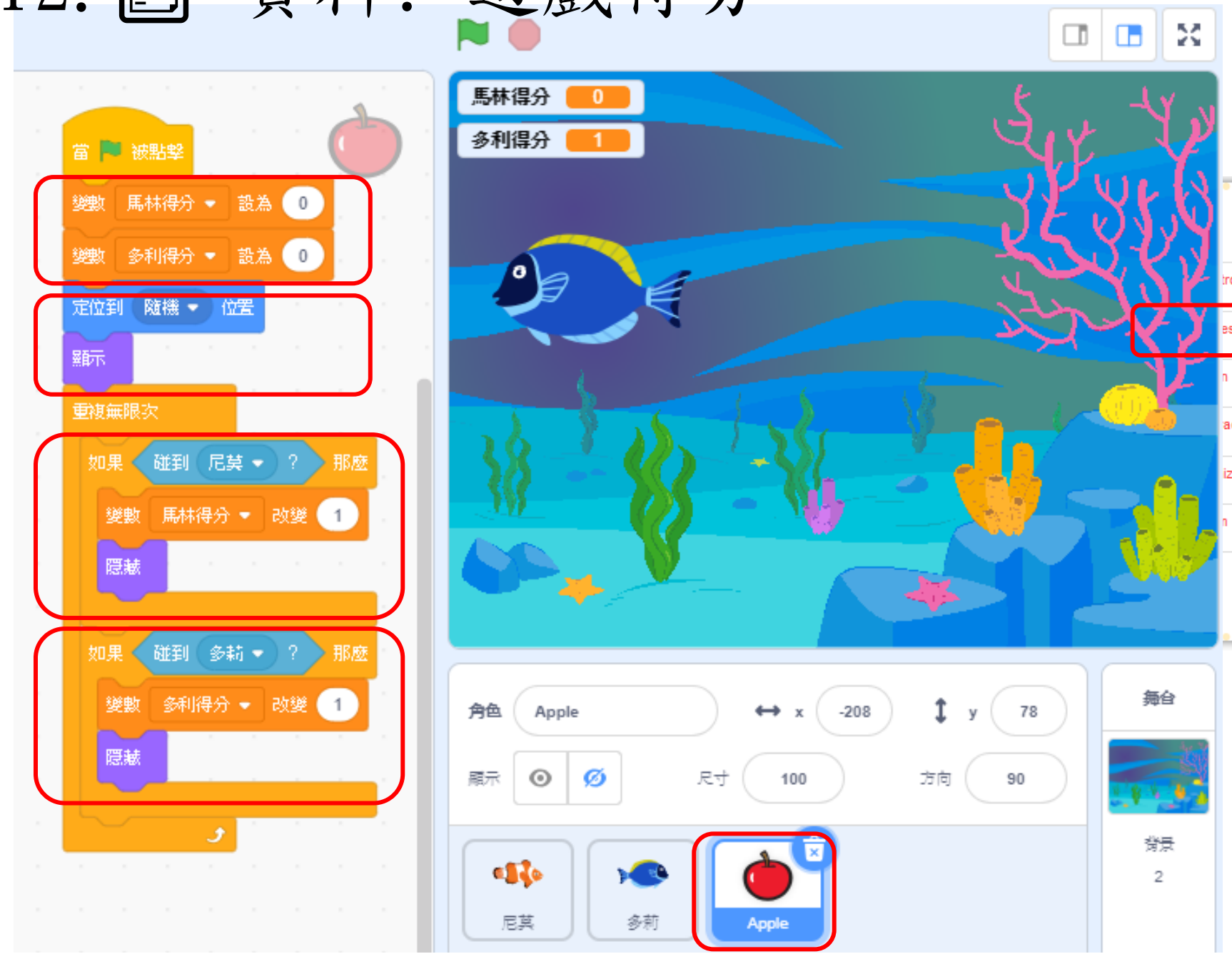
11. 人性：如果「按鍵按下」，方向改變

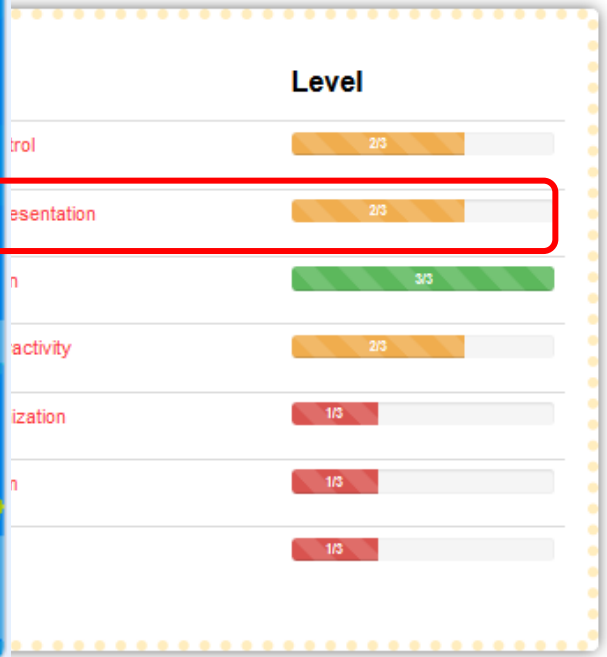






12. 資料：遊戲得分


當 被點擊
變數 馬林得分 設為 0
變數 多利得分 設為 0
定位到 隨機 位置
顯示
重複無限次
如果 碰到 尼莫 ? 那麼
變數 馬林得分 改變 1
隱藏
如果 碰到 多莉 ? 那麼
變數 多利得分 改變 1
隱藏
馬林得分 0
多利得分 1
角色 Apple
x -208
y 78
顯示
尺寸 100
方向 90
尼莫
多莉
Apple
舞台
背景
2


Level
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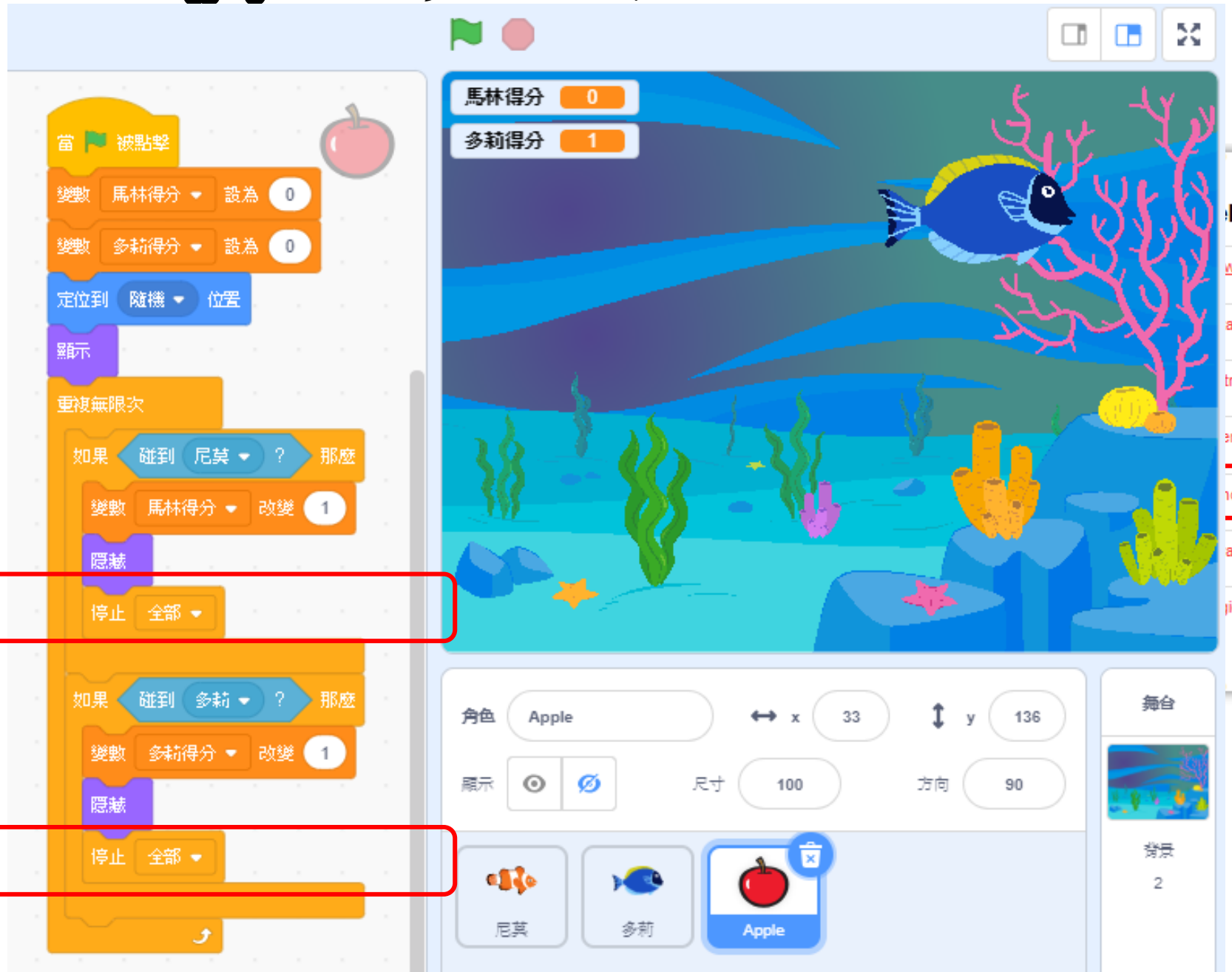
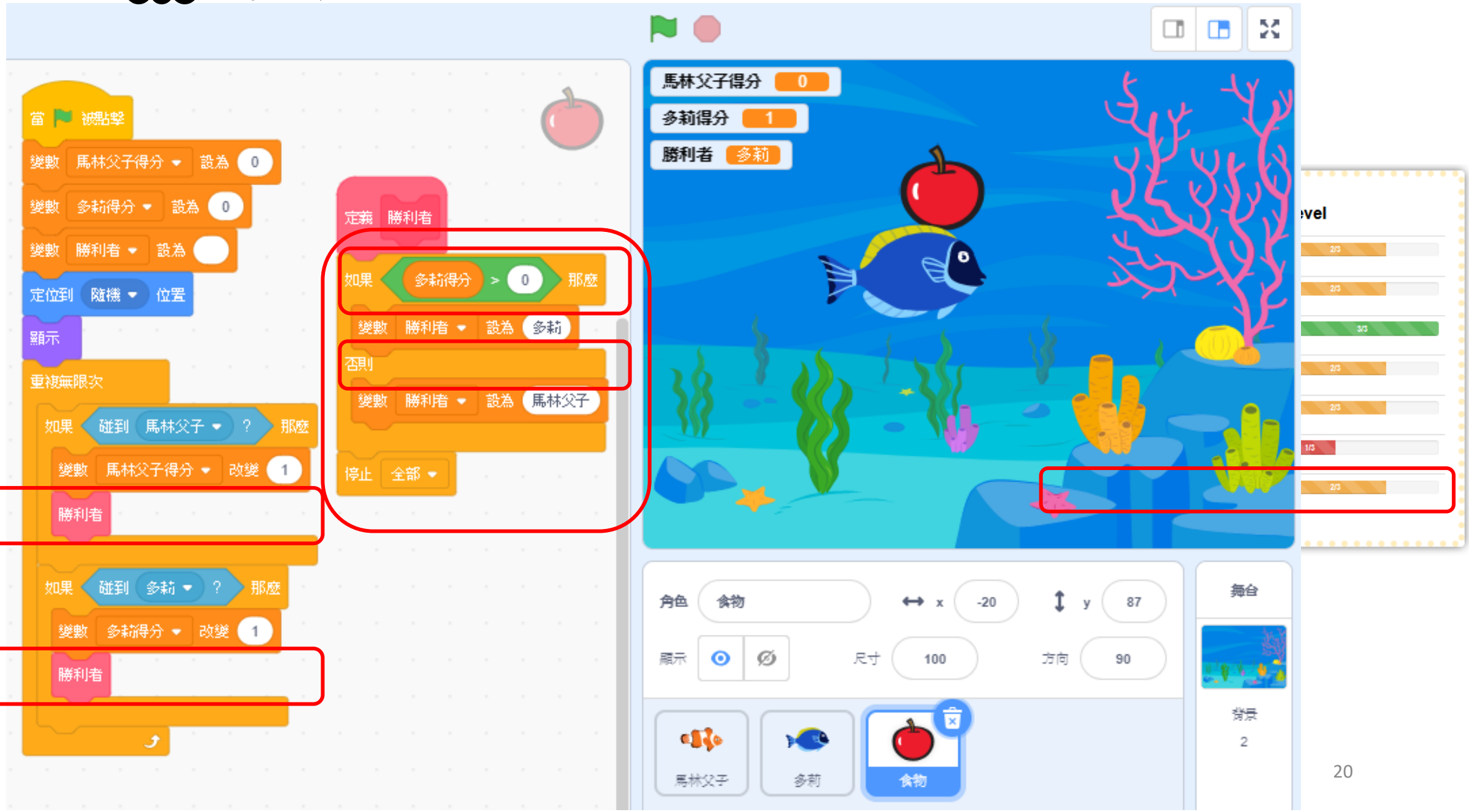
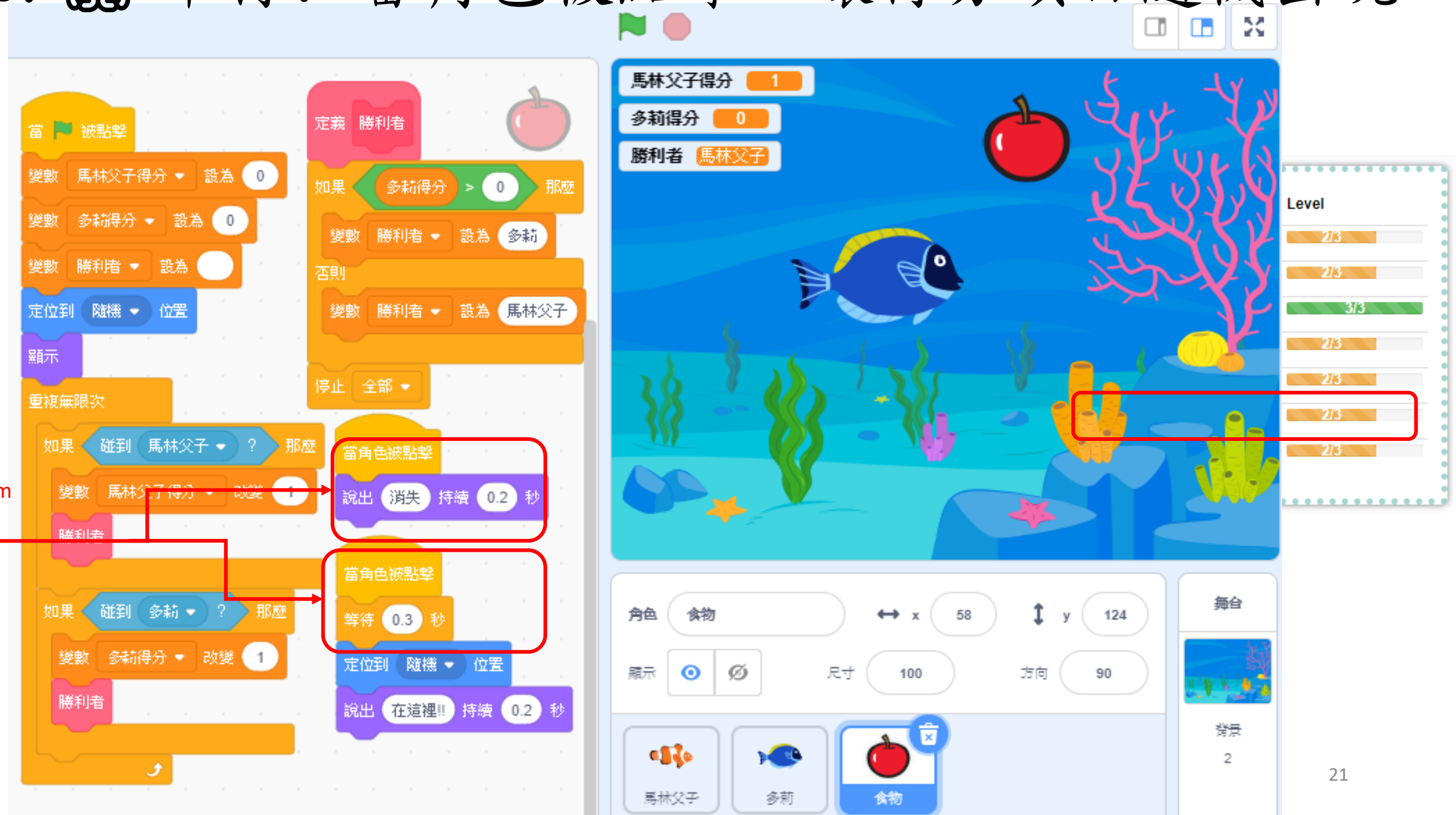
13. 同步：停止全部，遊戲結束



14. 邏輯：如果-否則 找出勝利者

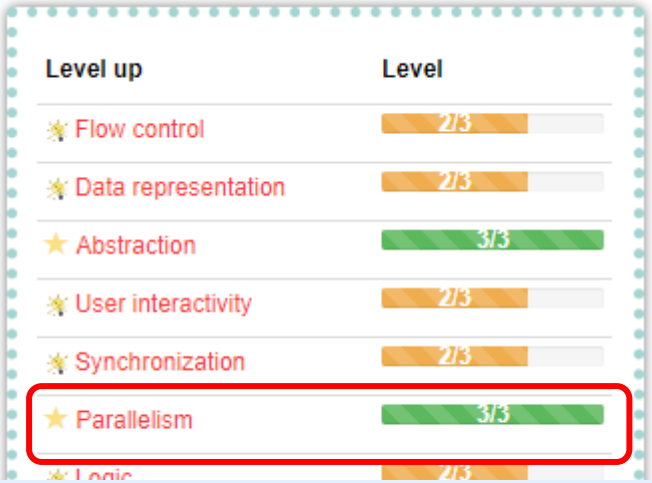


15. 平行：當角色被點擊，讓得分項目隨機出現

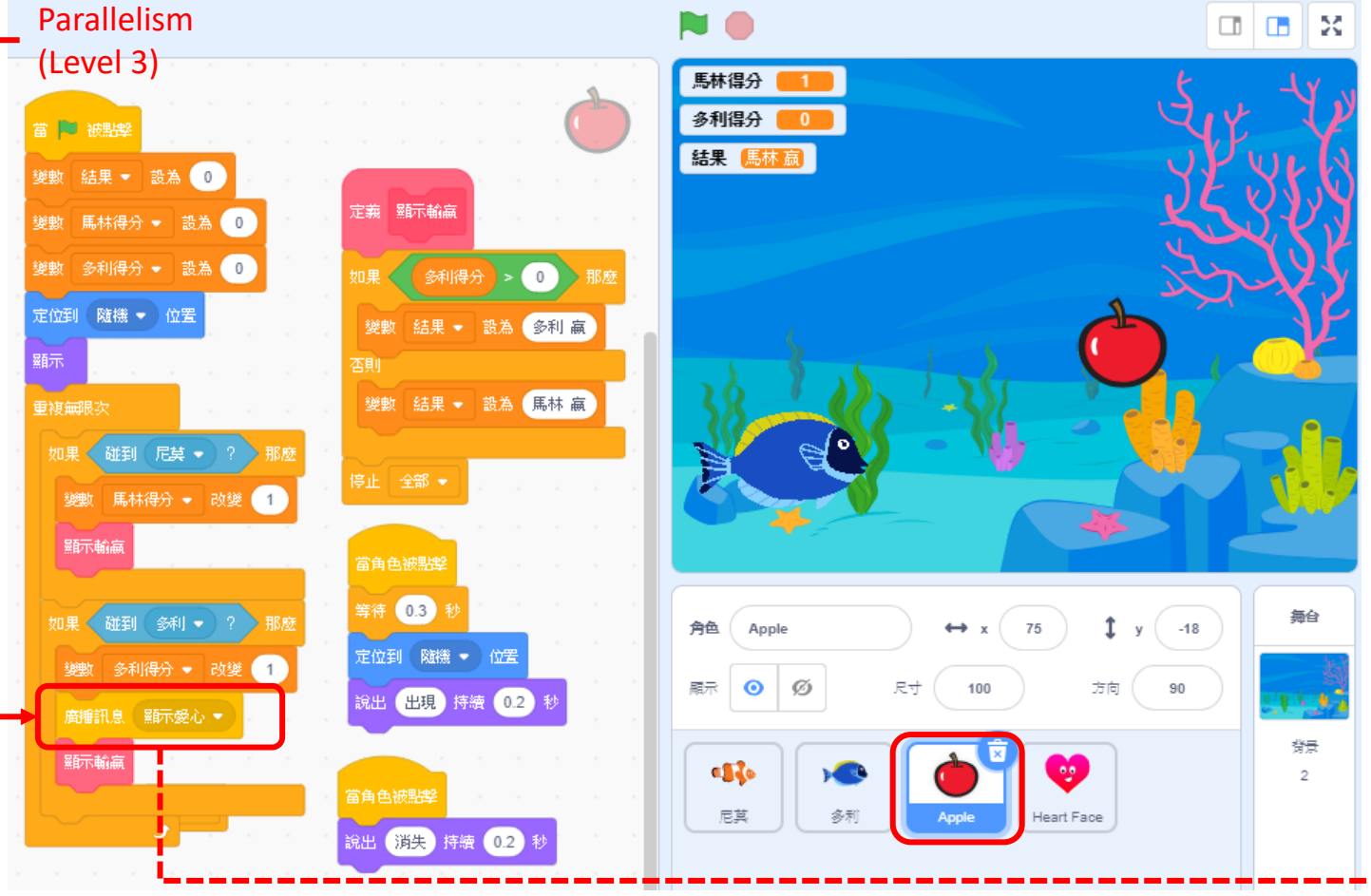


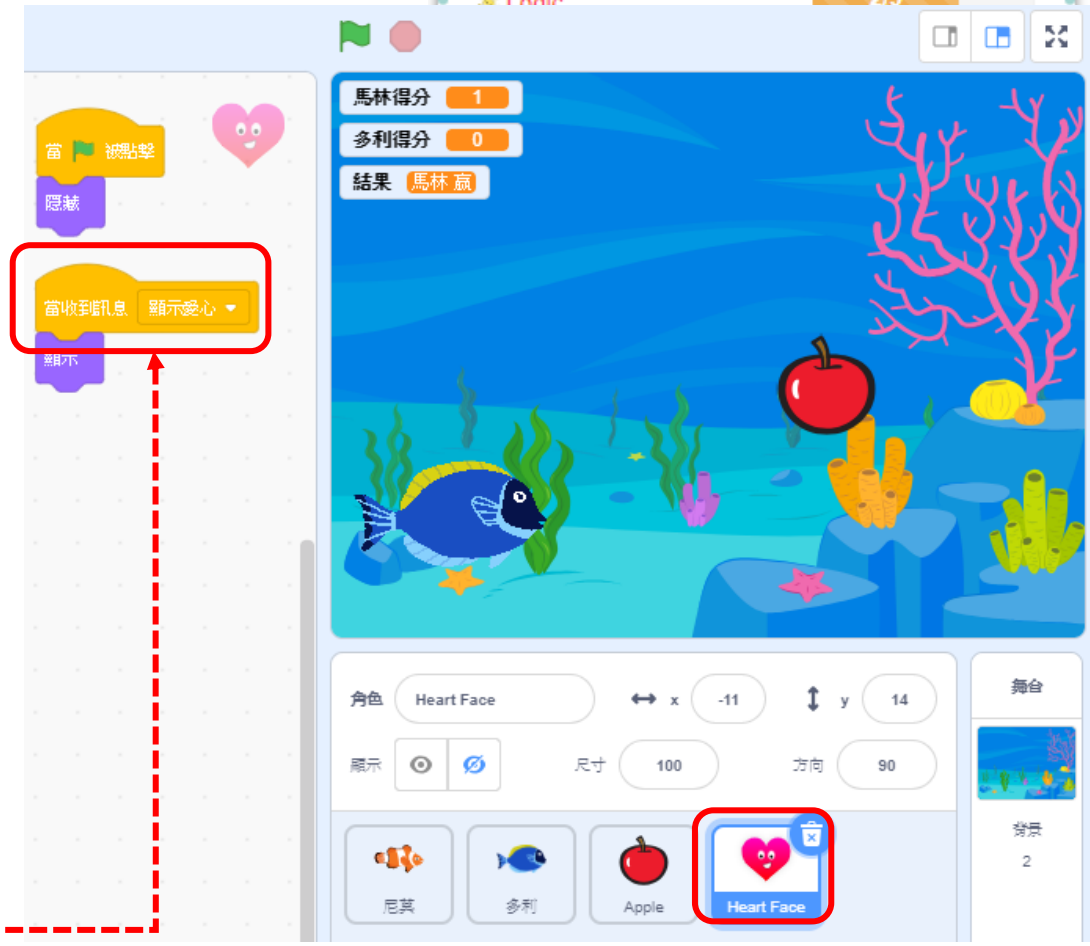
Parallelism (Level 2)

16. 平行:廣播訊息



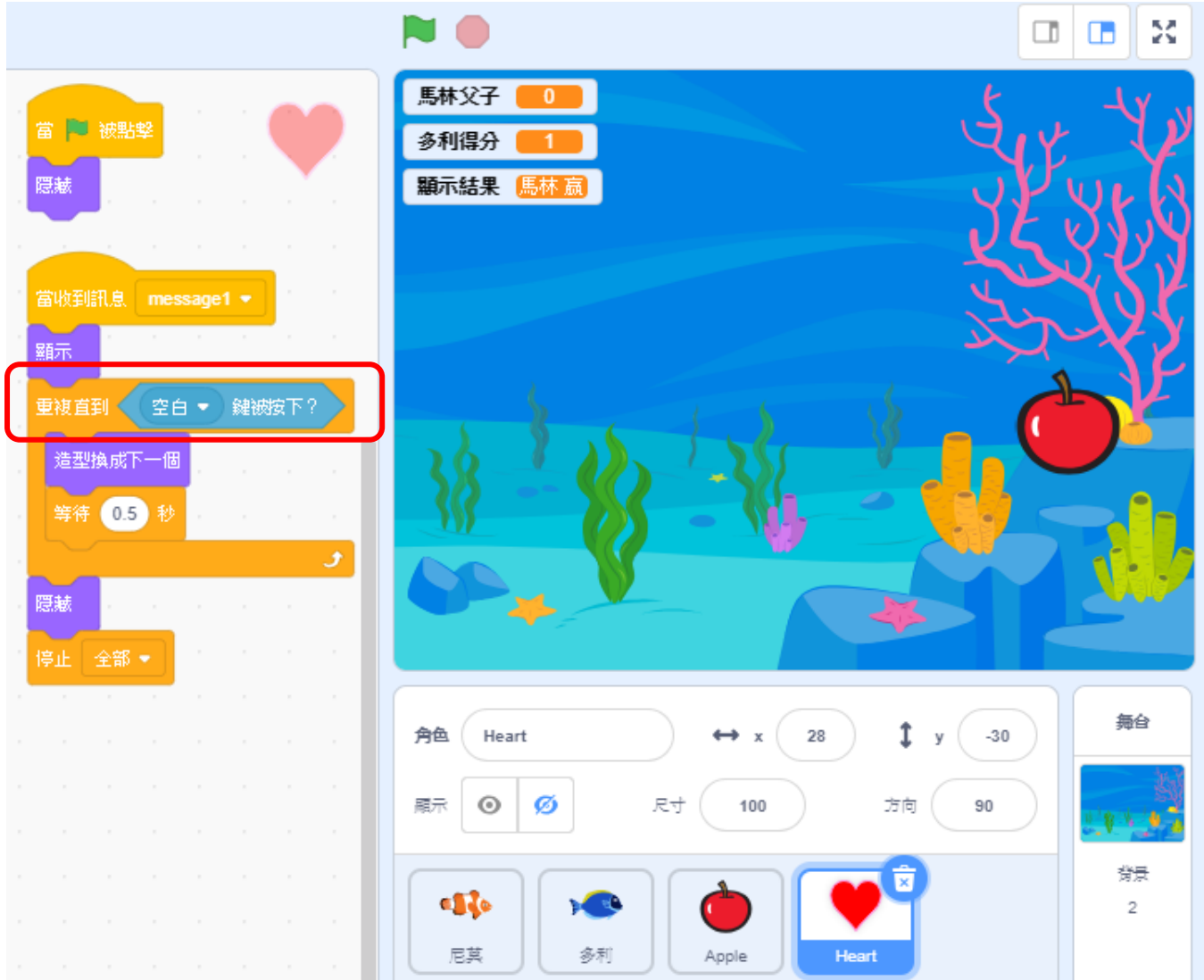
Parallelism
(Level 3)





17. 流程：重複直到

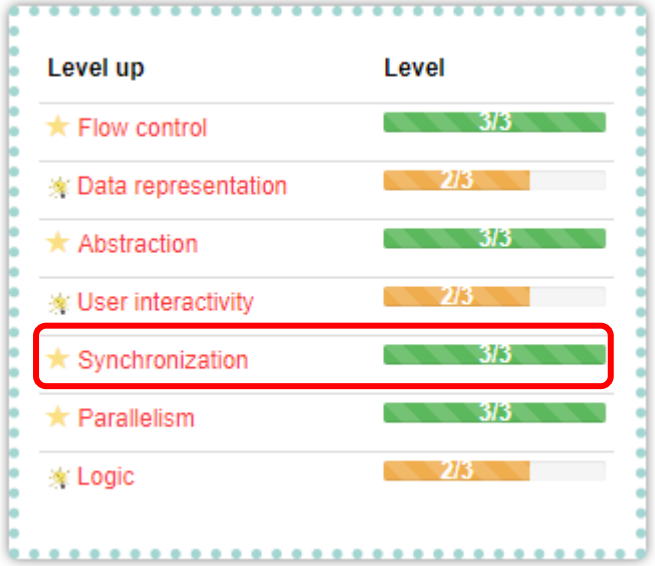
Flow Control (level 3)



Level up	Level
★ Flow control	3/3
★ Data representation	2/3
★ Abstraction	3/3
★ User interactivity	2/3
★ Synchronization	2/3
★ Parallelism	3/3
★ Logic	2/3

18. 同步：重複直到-愛心次數 > 5

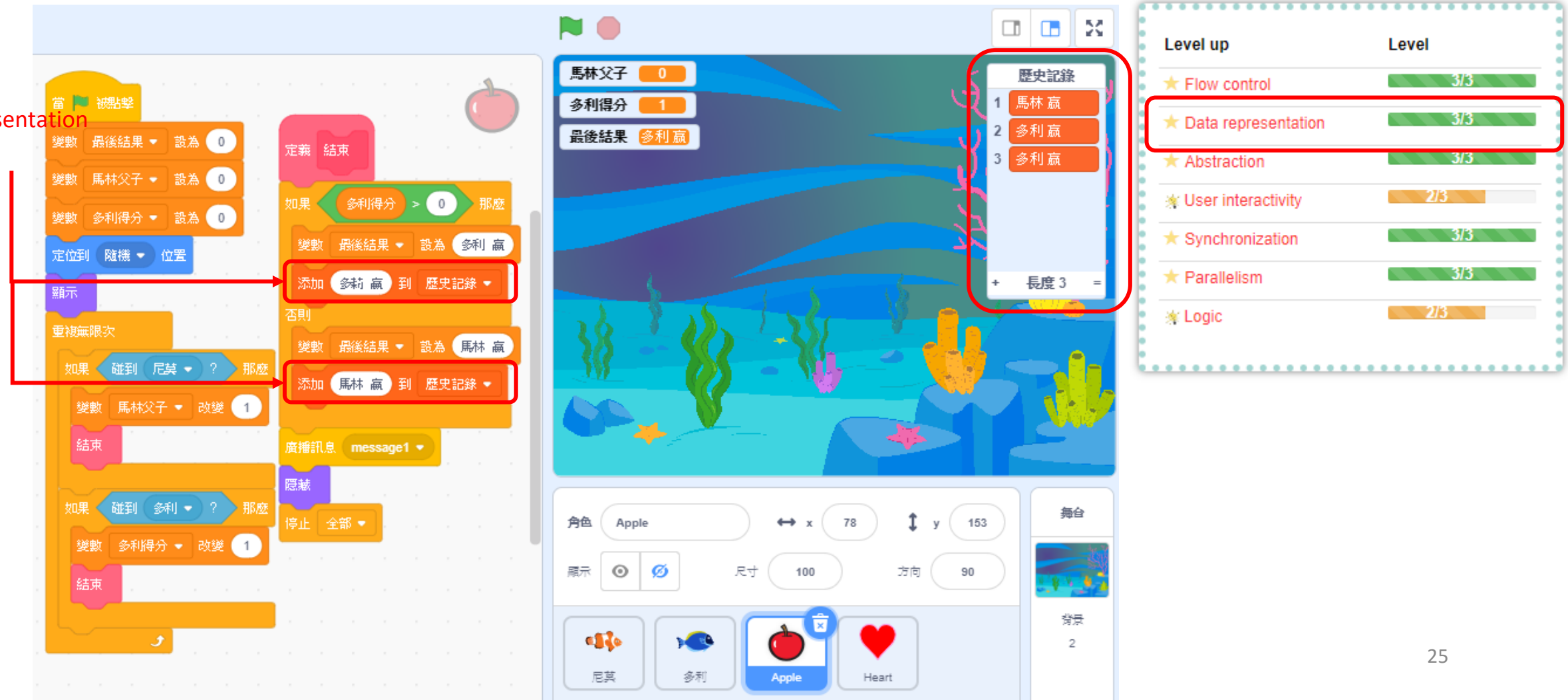
Synchronization



診斷評量 (cont.)

- Level 19: 數據呈現 Level 3（清單/陣列）

Data representation (level 3)

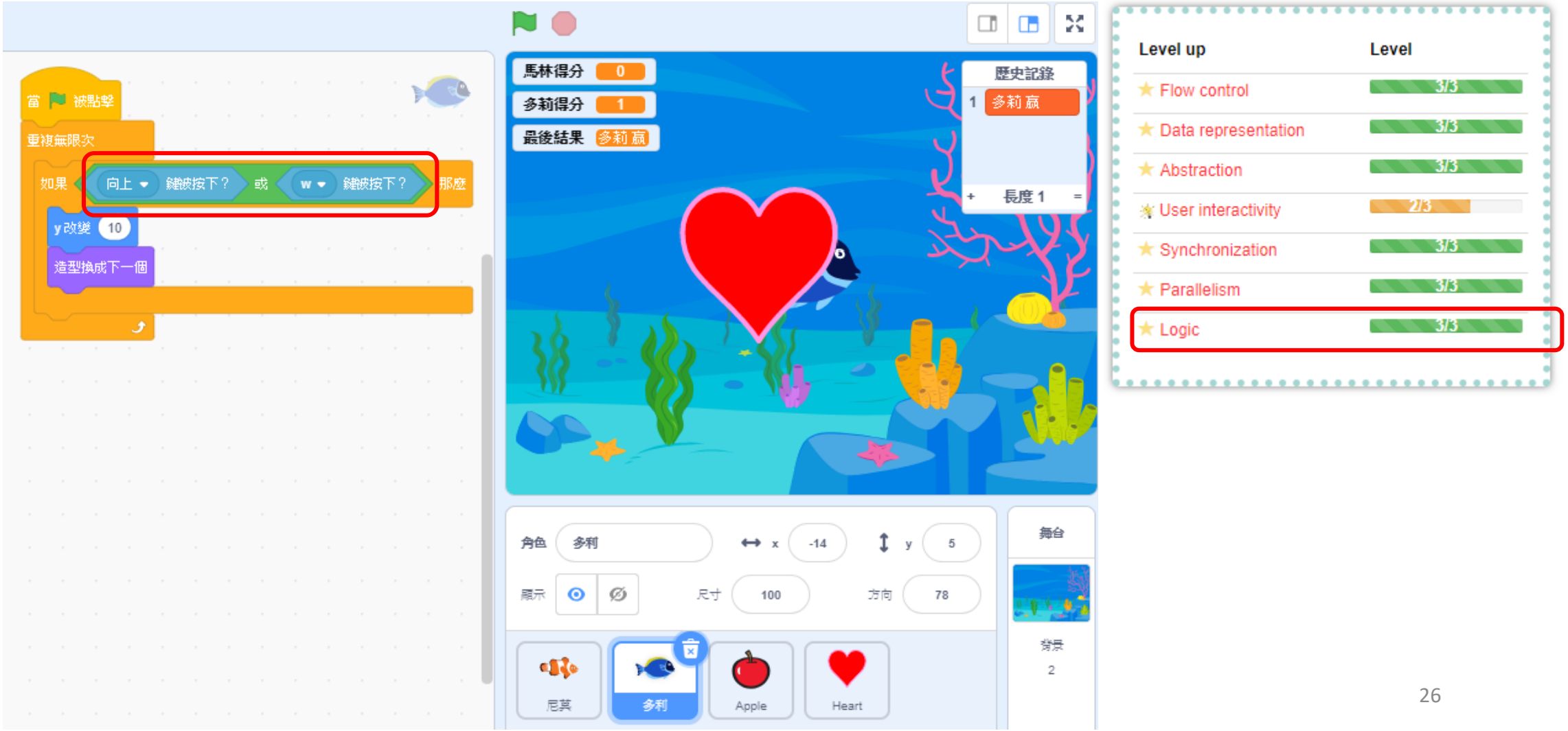


Level up	Level
Flow control	3/3
Data representation	3/3
Abstraction	3/3
User interactivity	2/3
Synchronization	3/3
Parallelism	3/3
Logic	2/3

診斷評量 (cont.)

- Level 20: 邏輯判斷 Level 3（按下向上鍵或w鍵，按鍵的多重偵測）

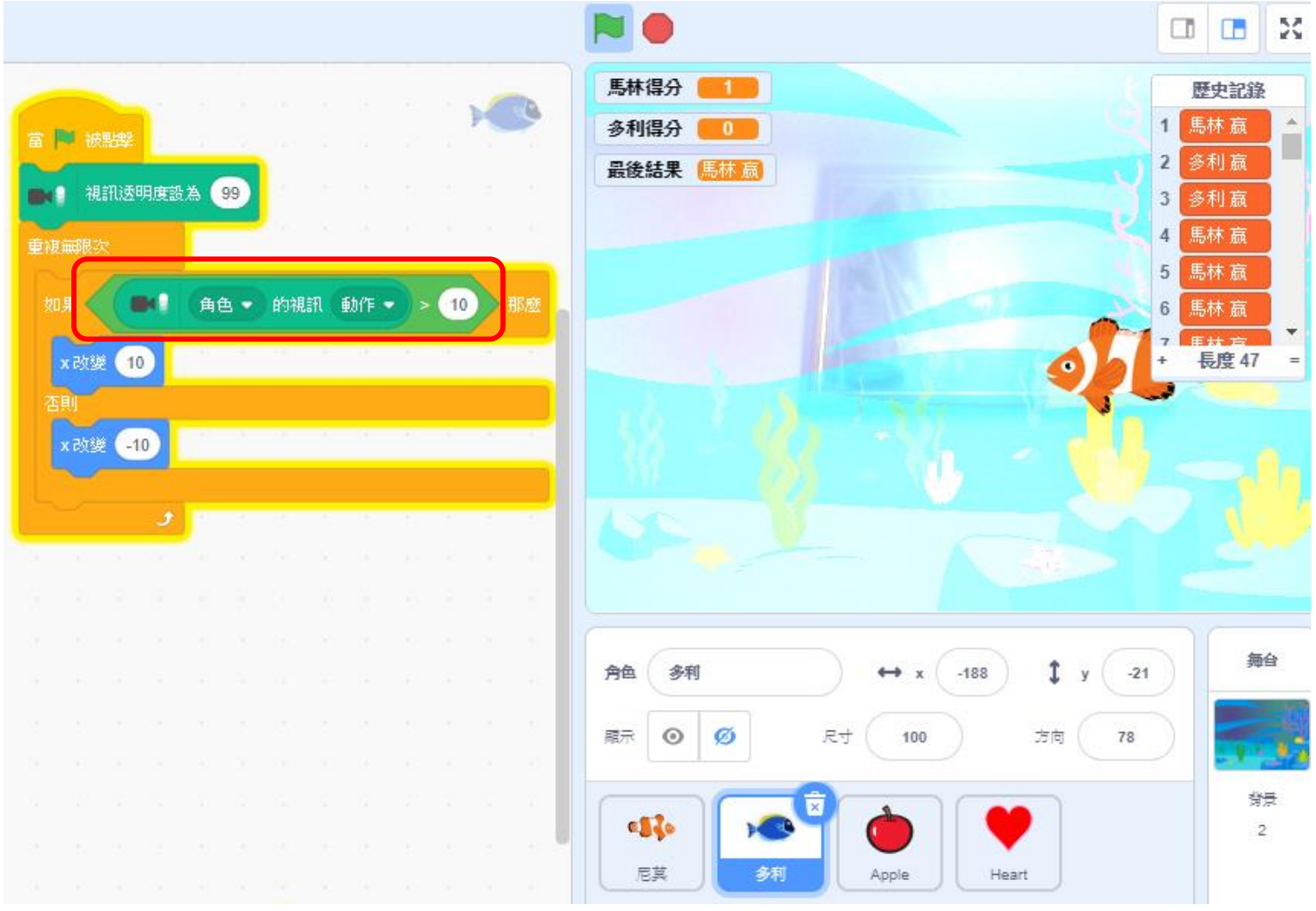
Logic (level 3)



診斷評量 (cont.)

- Level 21: 互動性 Level 3（偵測視訊動作）

User interactivity (level 3)



Level up	Level
★ Flow control	3/3
★ Data representation	3/3
★ Abstraction	3/3
★ User interactivity	3/3
★ Synchronization	3/3
★ Parallelism	3/3
★ Logic	3/3