賽馬會運算思維教育
CoolThink @JC InnoCommunity

Scratch 3.0工作坊

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The Hong Kong Jockey Club Charities Trust
同心 同步 同進 RIDING HIGH TOGETHER

聯合策動 Co-created by:

香港教育大學
The Education University of Hong Kong

Massachusetts Institute of Technology

香港城市大學
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Inspiring digital creativity 啟發數碼創意

工作坊 程序

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1. 簡介Scratch 3.0

2. 認識Scratch創辦人的4P教學法

3. 認識Scratch 3.0的介面操作

4. 認識Scratch 3.0的新功能

5. Q & A

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簡介Scratch 3.0

簡介Scratch 3.0

- Scratch是麻省理工媒體實驗室開發的一套電腦程式開發平台，旨在讓程式設計語言初學者不需先學習語言語法便能設計產品。
- 創辦人是Prof. Mitchel Resnick。
- 2019年1月2日正式發布，以下是試行版：
- https://beta.scratch.mit.edu/

簡介Scratch 3.0

- Scratch 3.0介面有改變，需重新適應。
- Scratch 3.0新增不少功能，特別在玩家互動方面大大加強，提升新用家/小學生學習興趣。
- 今天介紹的互動功能主要有二:
- 1. video sensing
- 2. microbit

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Scratch創辦人 Prof. Mitchel Resnick的 4P教學法

4P創意學習

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Prof. Mitchel Resnick- 4Ps for creative learning

Project
Peer
Passion
Play

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主頁　關於我們　運算思維

我們的使命

啟發香港學生的數碼創意

教學流程

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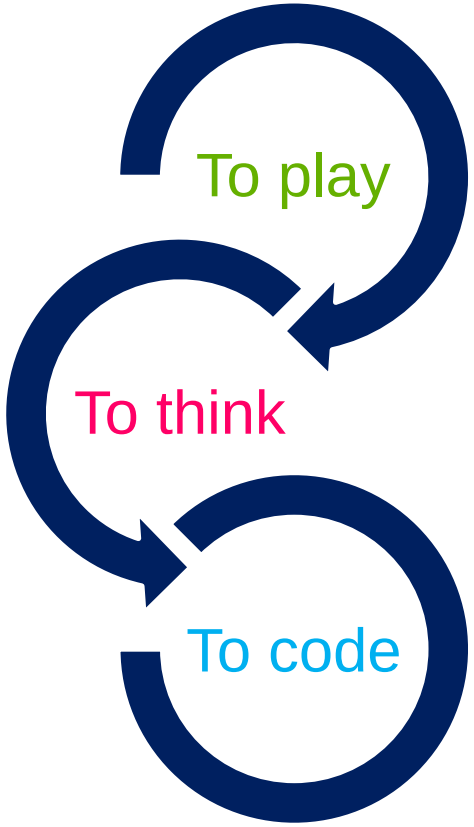
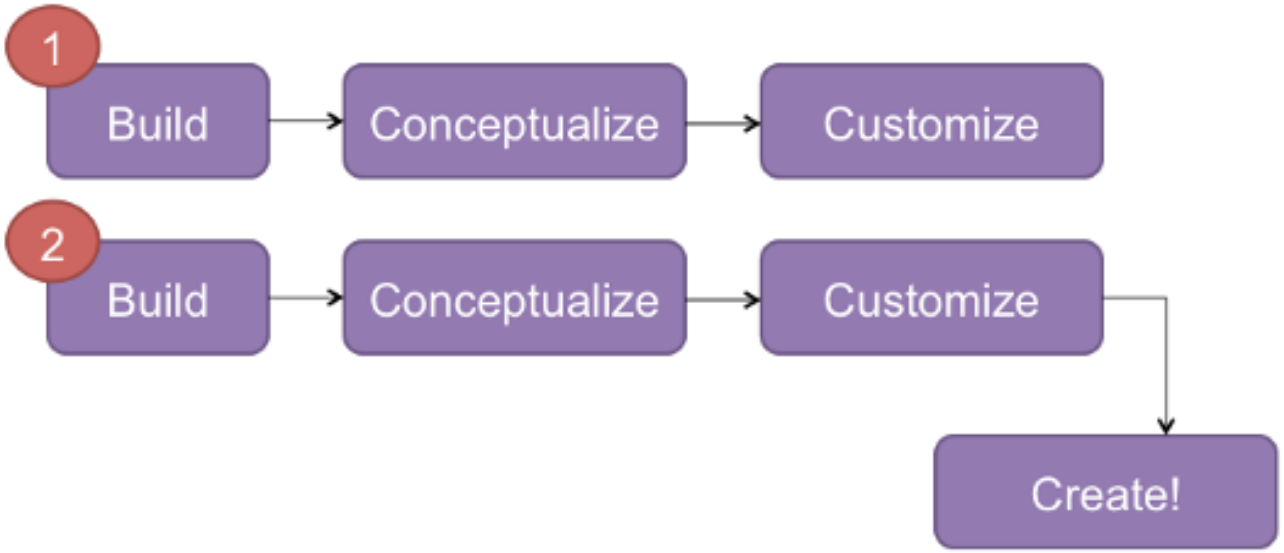


程式體驗

明白程式

實際編程



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我們開始教學吧!

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認識Scratch 3.0的介面
操作:
Create a Pong game

Beta.scratch.mit.edu

Create a Pong game

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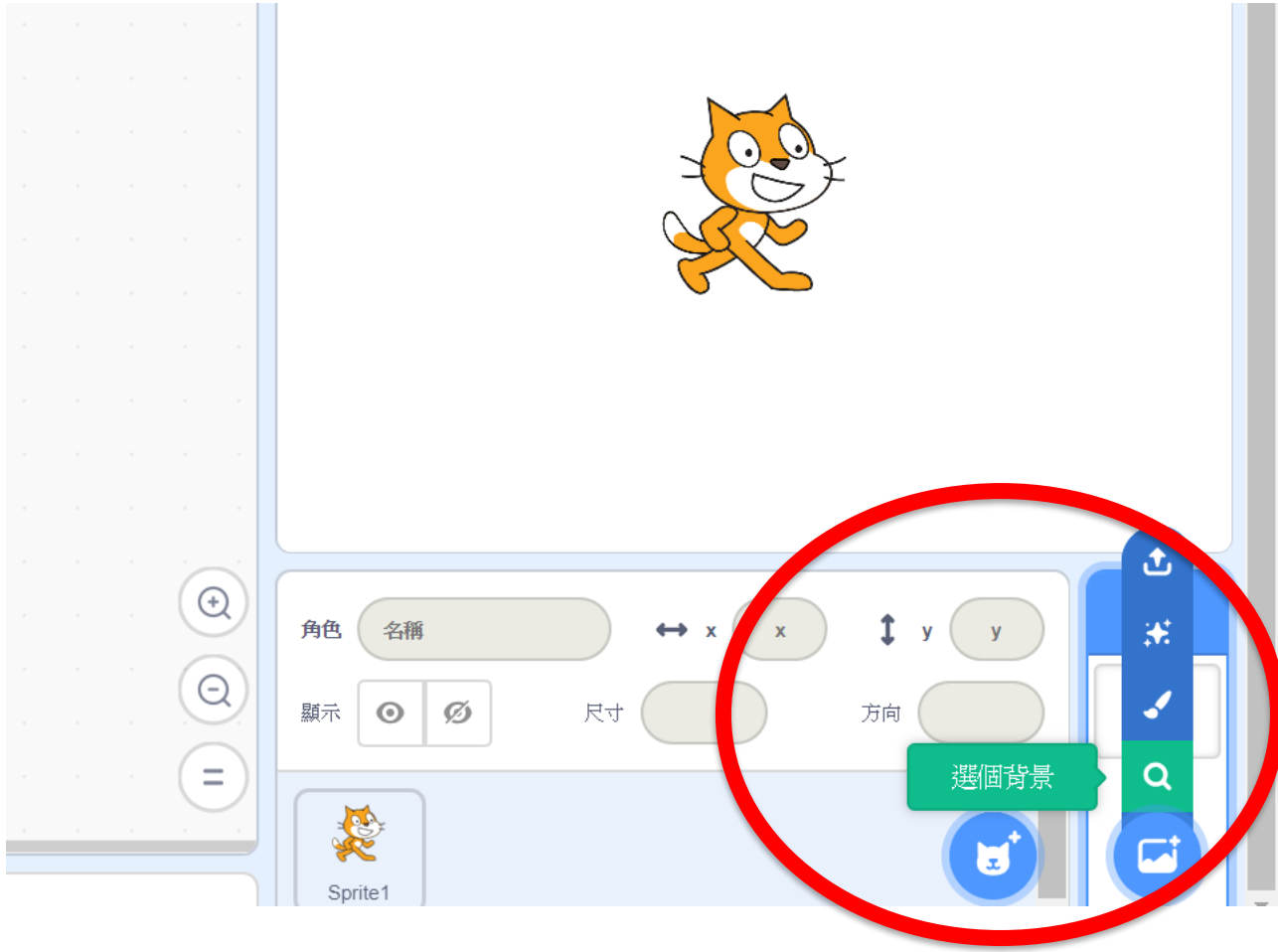
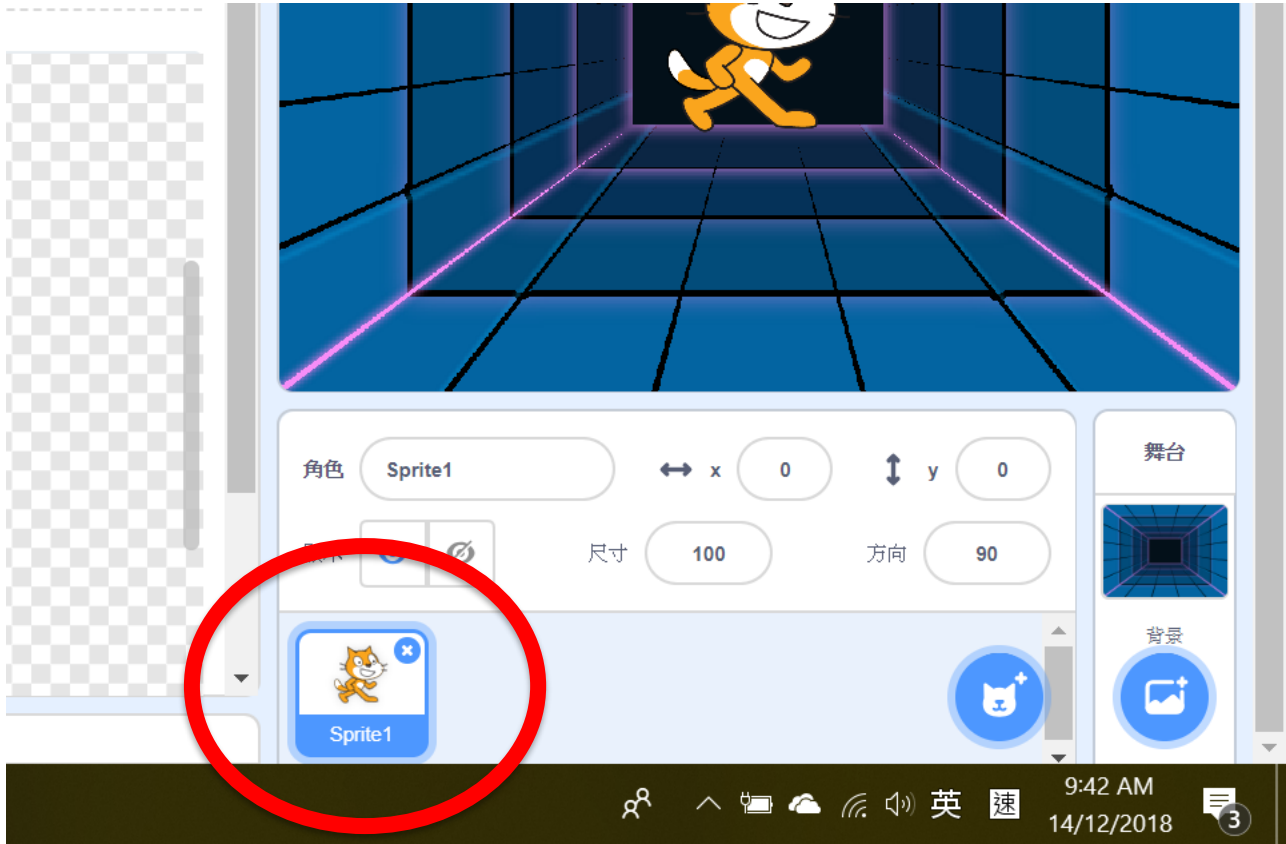
- 按右下角「選個背景」
- 選擇你喜歡的背景



Create a Pong game

- 按sprite 1右上角的“x”刪除小貓



Create a Pong game

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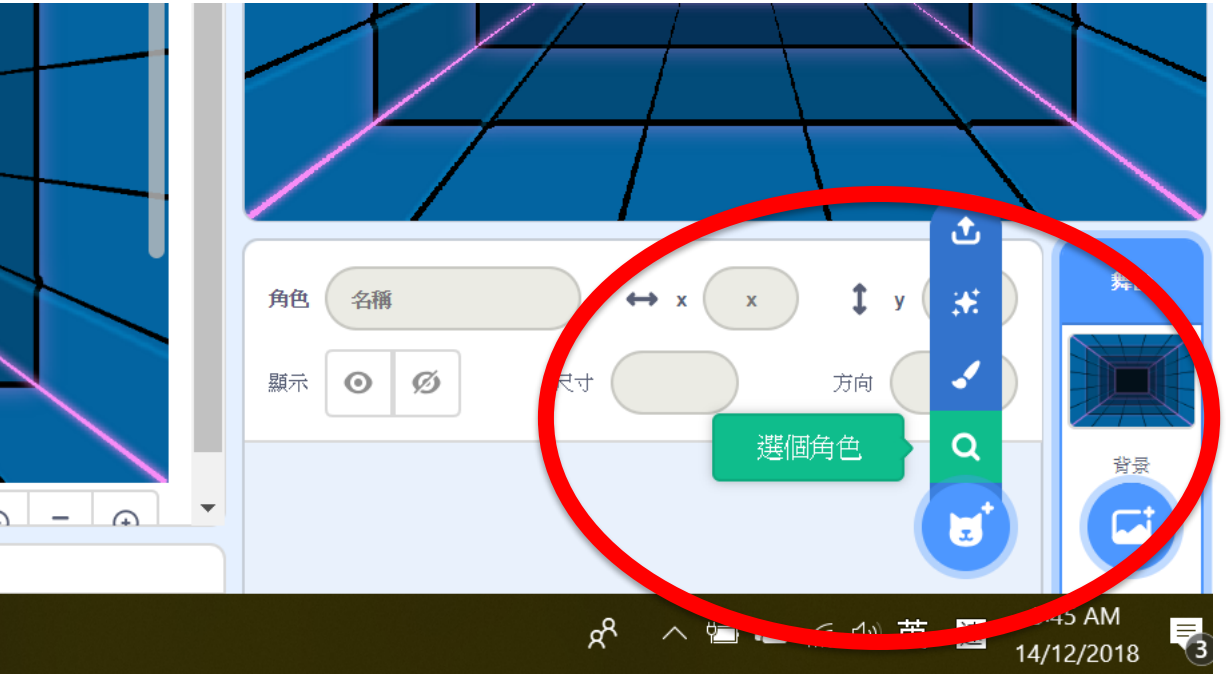
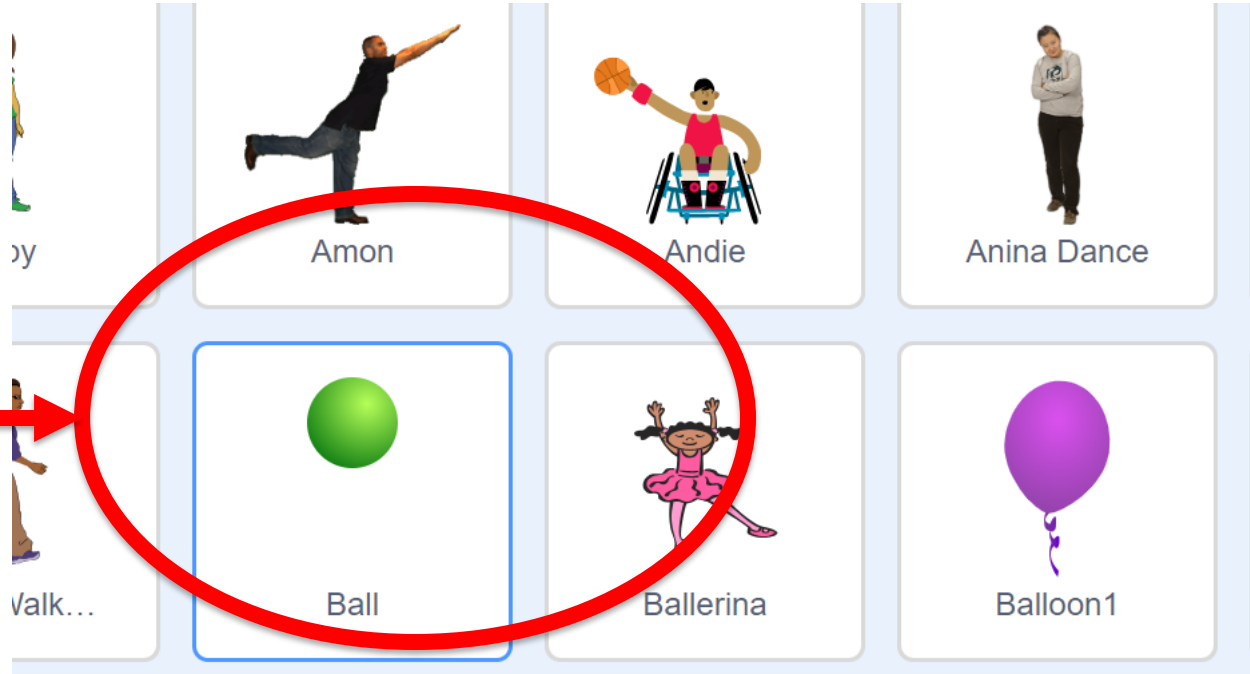
- 在右下方的角色(sprite)中加入ball





Create a Pong game

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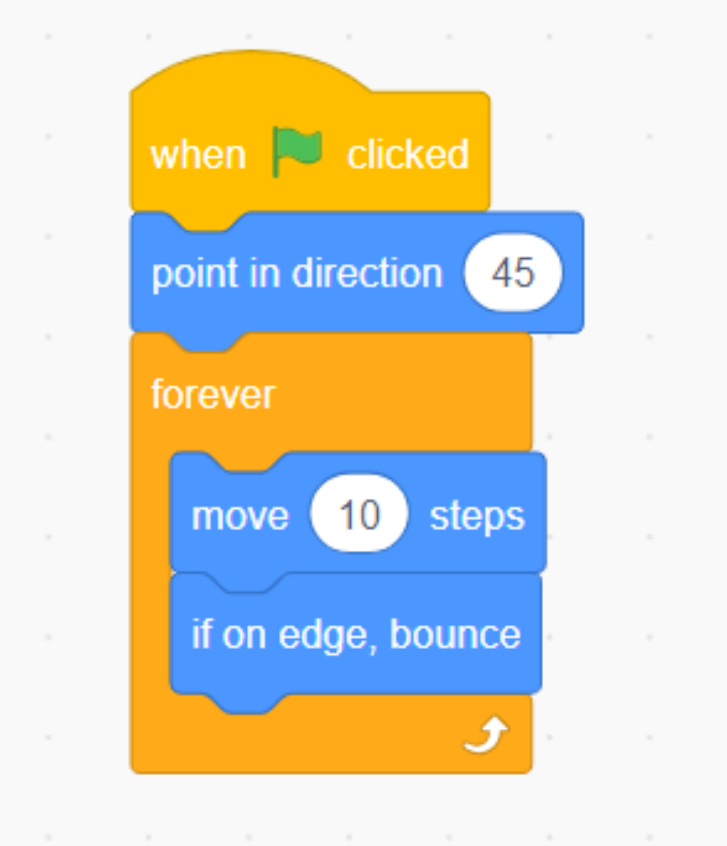
- 寫程式令ball移動



Create a Pong game

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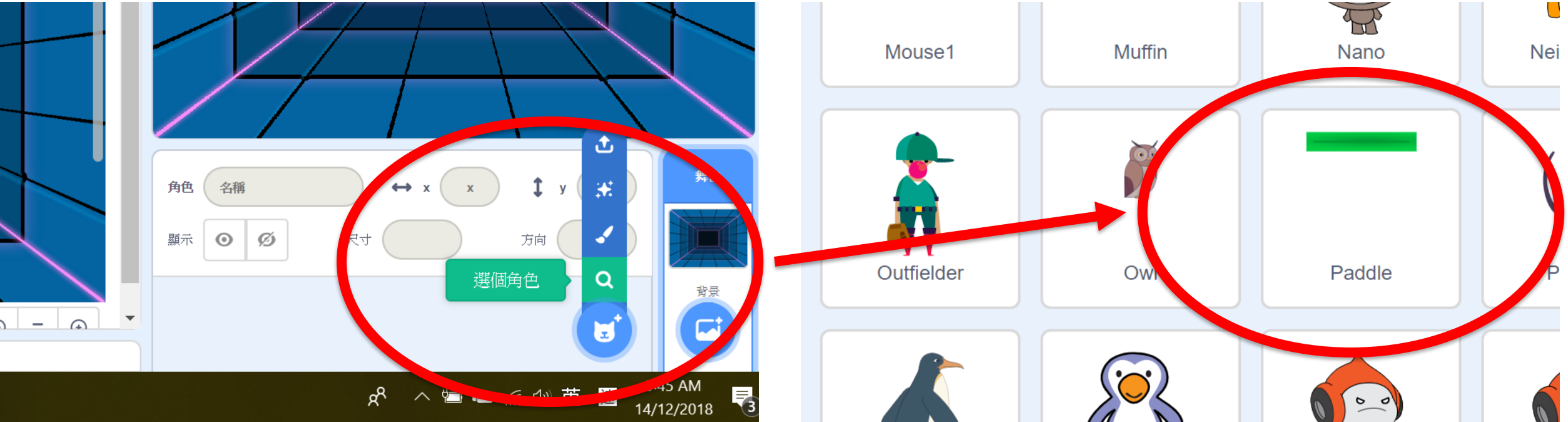
- 在右下方的角色(sprite)中加入Paddle



Create a Pong game

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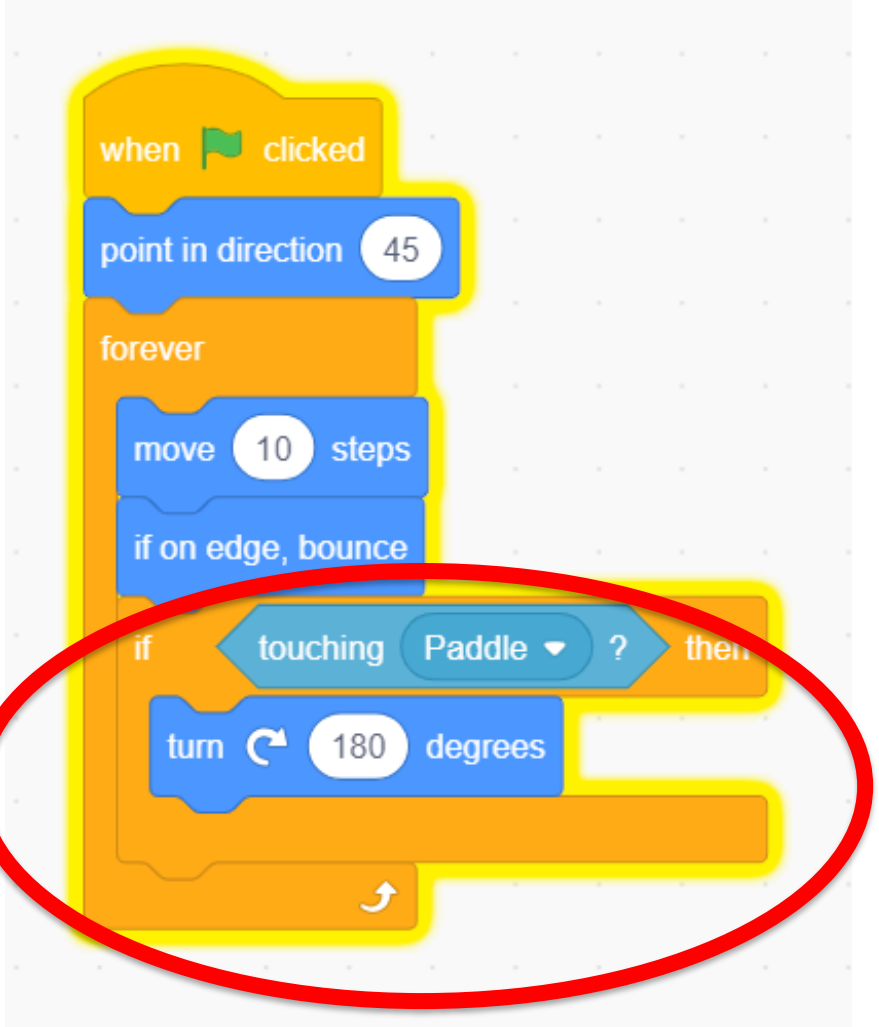
- 寫程式令Paddle移動

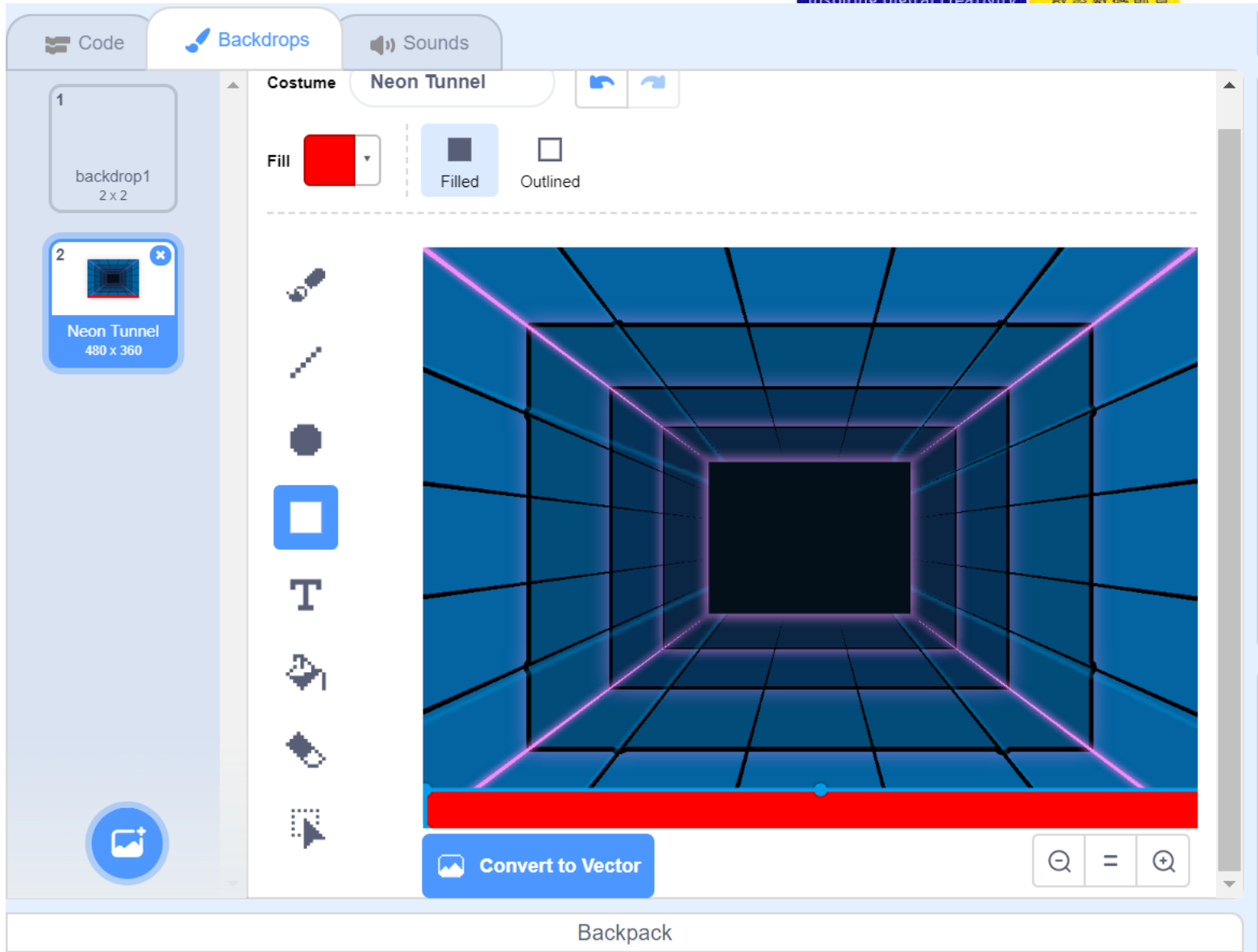
Create a Pong game

- Code the Ball to Bounce off the Paddle



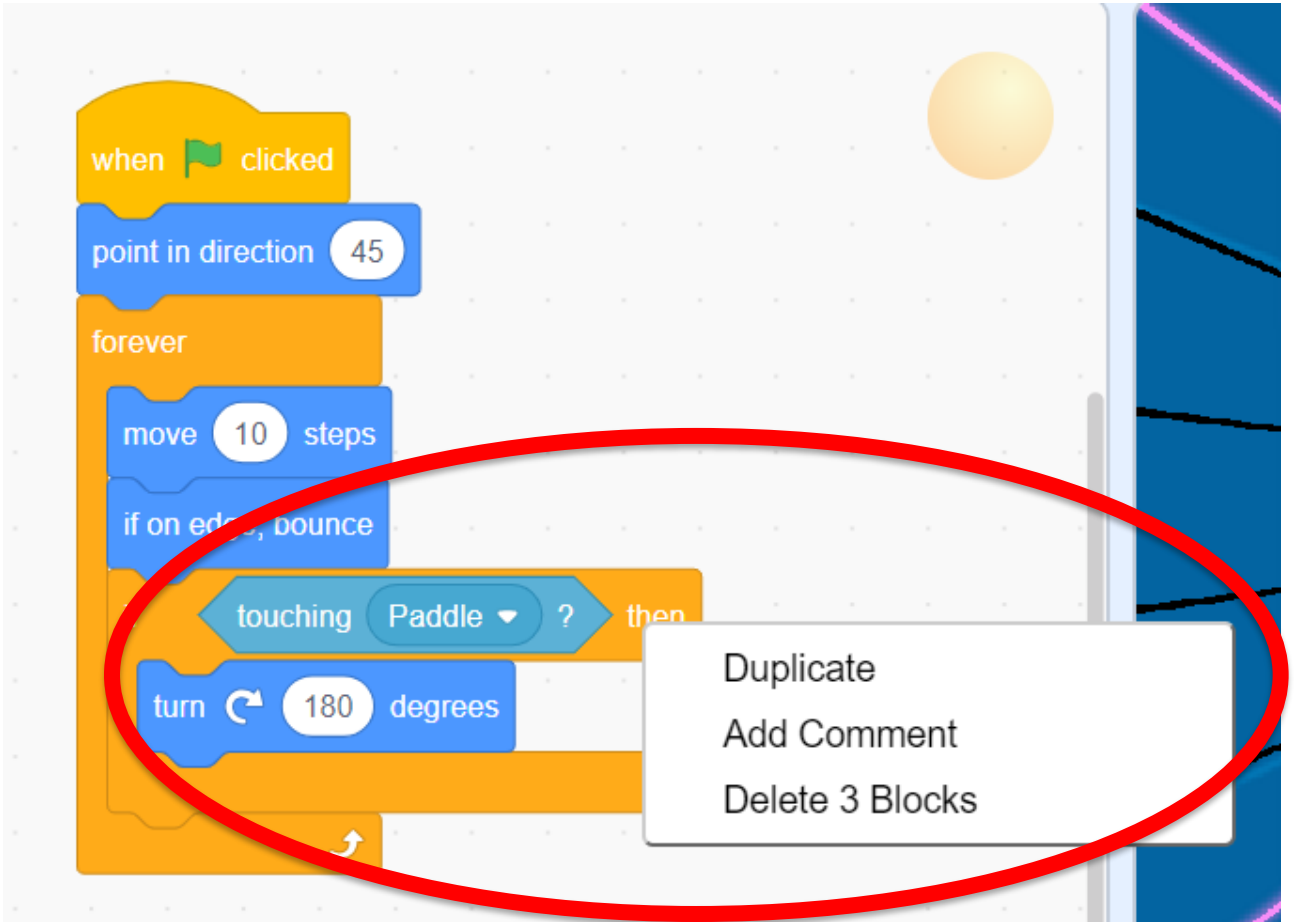
Create a Pong game

- 增加挑戰:
- edit backdrop



Create a Pong game

- Code the Ball to Bounce off the Red line
- 1. duplicate blocks



Create a Pong game

- Code the Ball to Bounce off the Red line
- 2. touching colour block

Create a Pong game

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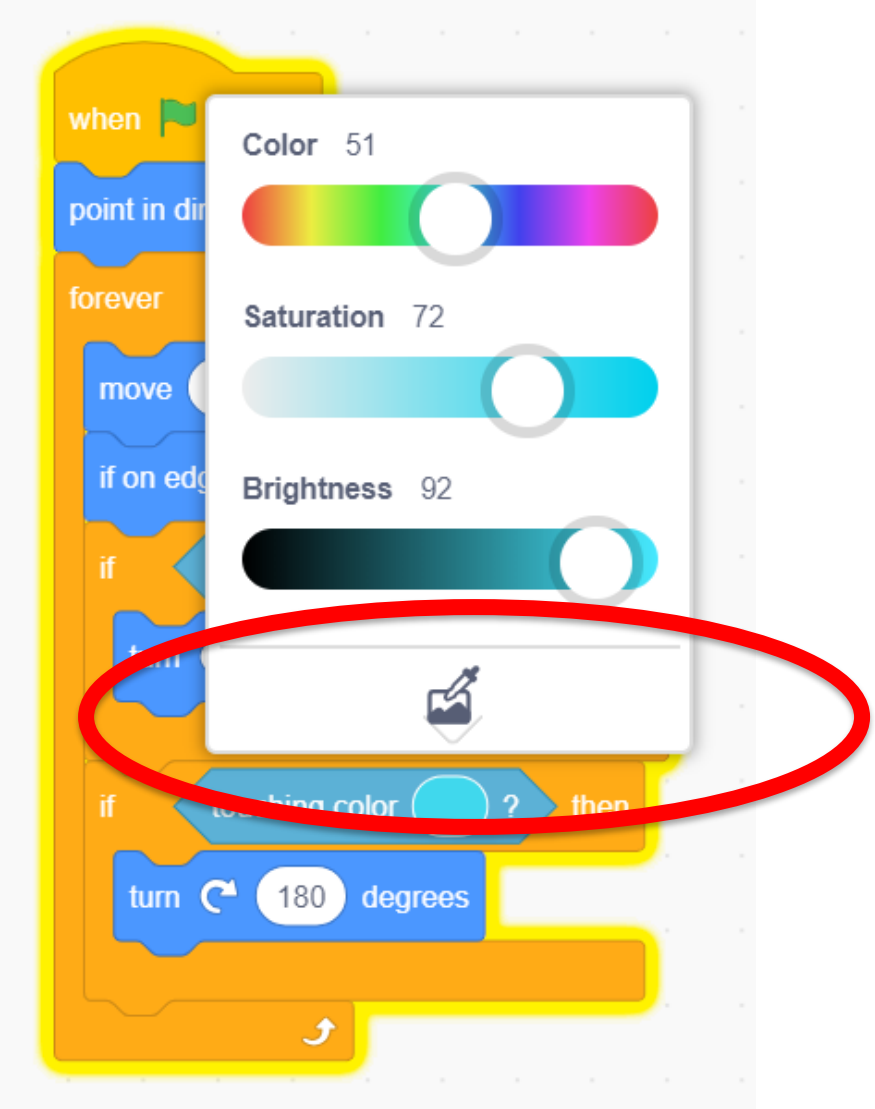
- Code the Ball to Bounce off the Red line
- 3. Picking colour



Create a Pong game

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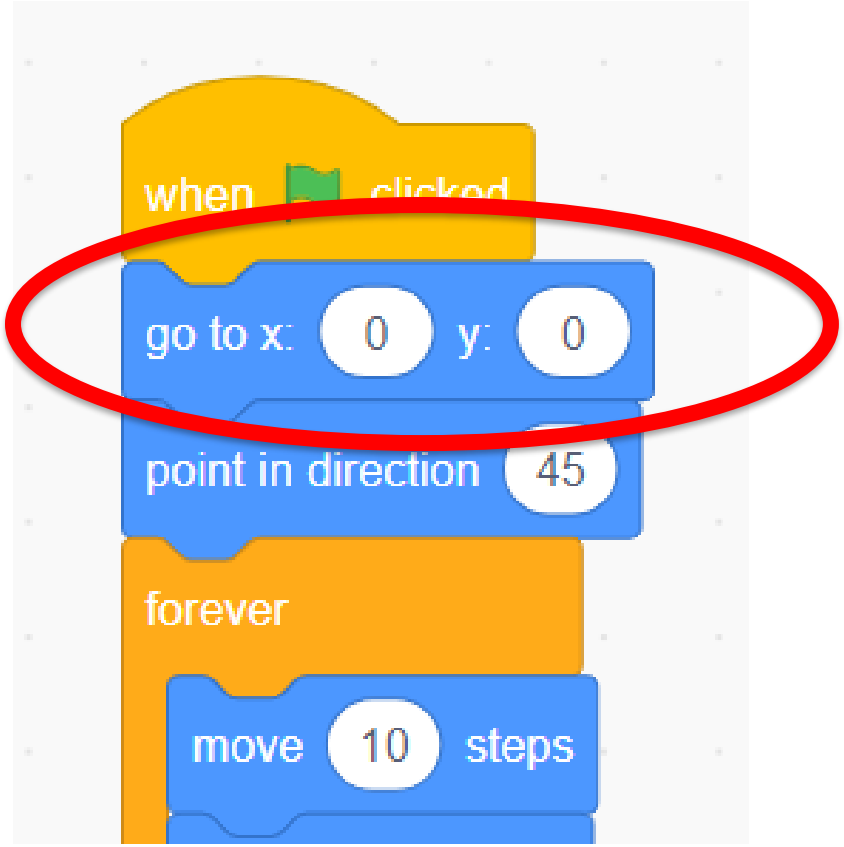
- Code the program to stop when touching red line

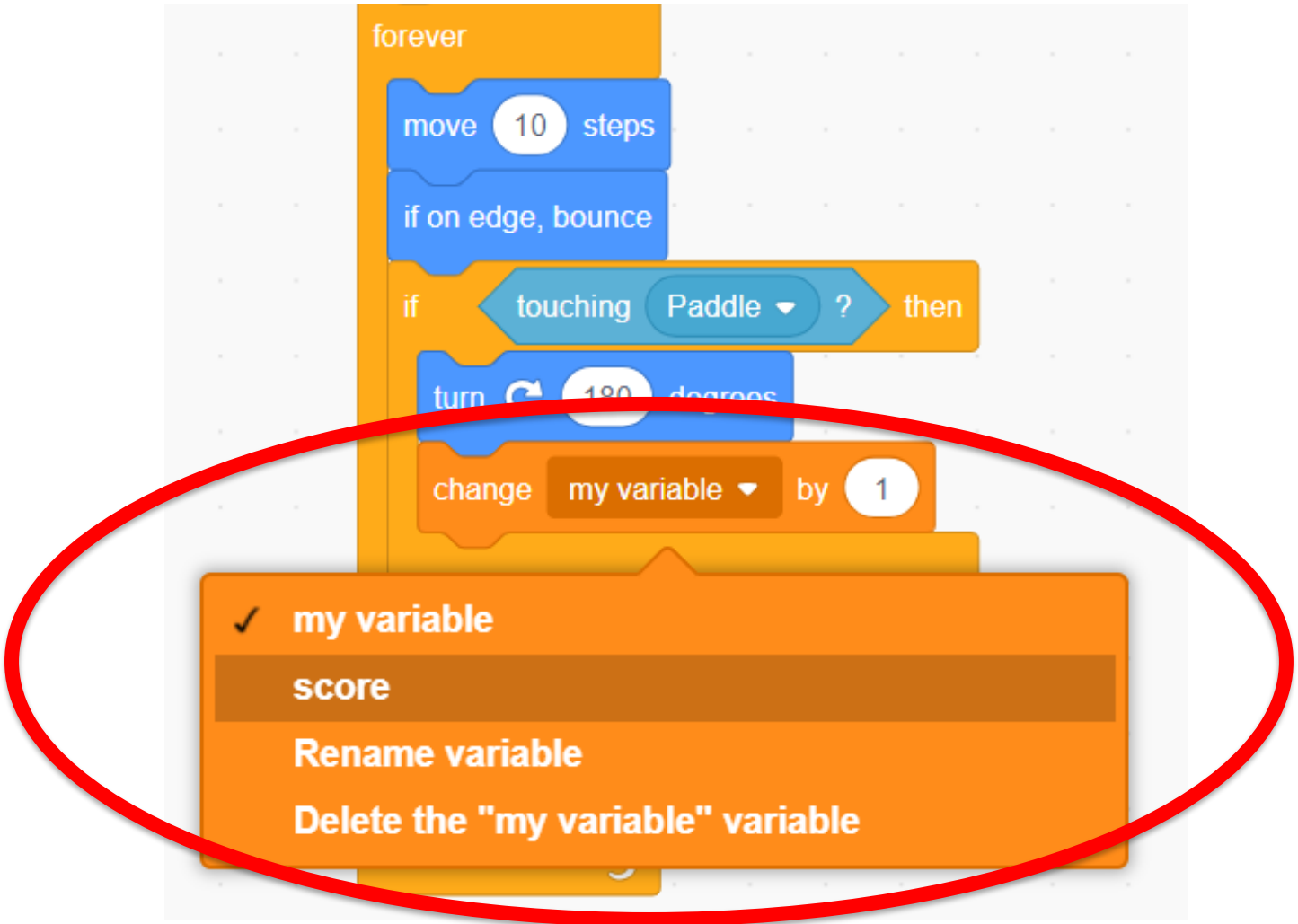
Create a Pong game

- Code the starting position of the ball



Create a Pong game

- Add variable:
- score



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認識Scratch的新功能

認識Scratch 3.0的新功能

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- Create, share, and remix projects on tablets (in addition to laptops and desktops, of course)
- With the new extension system, children can use video-sensing to manipulate Scratch, program physical devices (like micro:bit) and web services (like Google Translate)

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認識Scratch的新功能:
Microbit extension

MicroBit Extension

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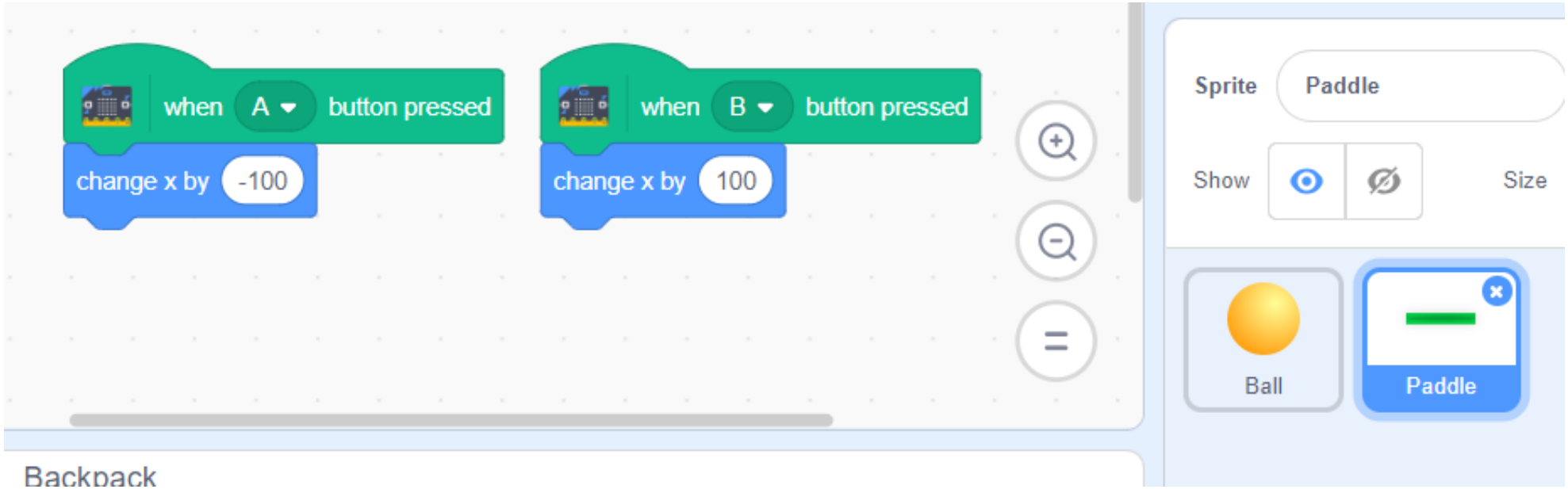
https://scratch.mit.edu/microbit

https://llk.github.io/microbit-extension/iste18/?fbclid=IwAR3eQidU_ff_tTb7e_b9m-QN_1T-EtSZQYhs_QcQnpIpaWxgZ7iR5wZoEdM

Remix the Pong Game



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認識Scratch的新功能:
Video sensing

Video-sensing

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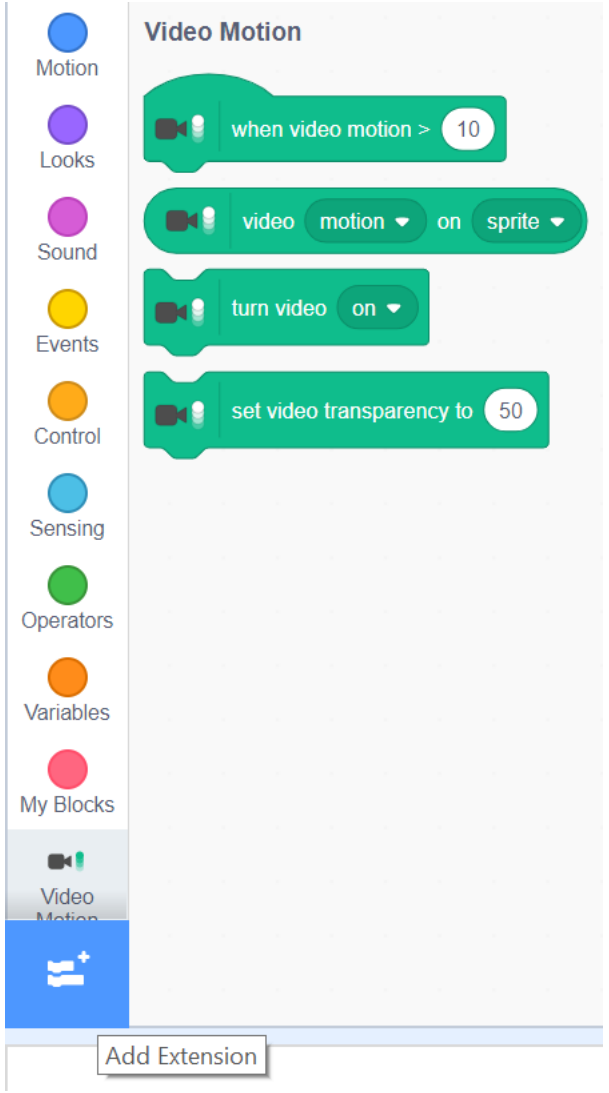
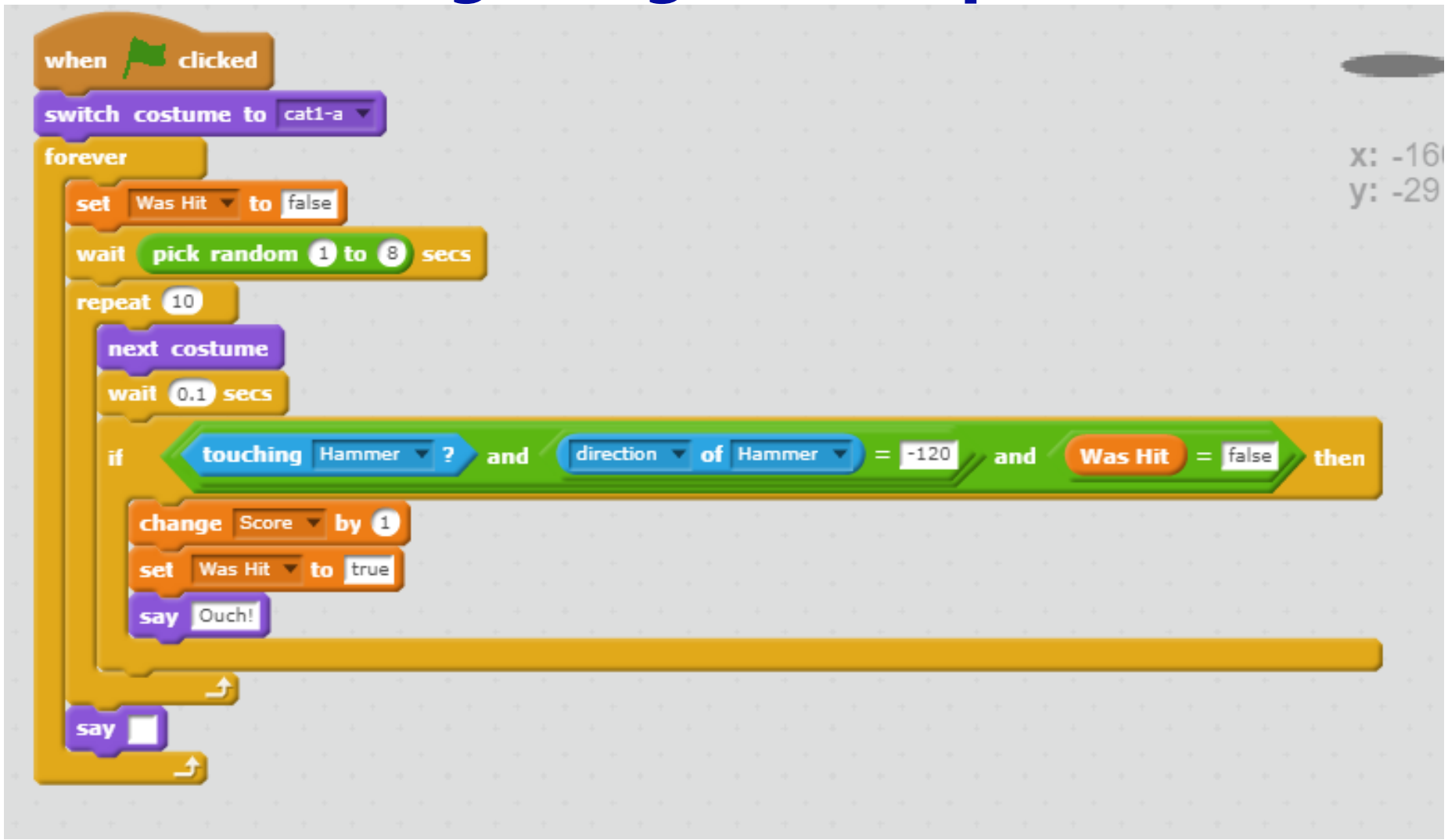


Remix “Whack a Cat” game using Video sensing

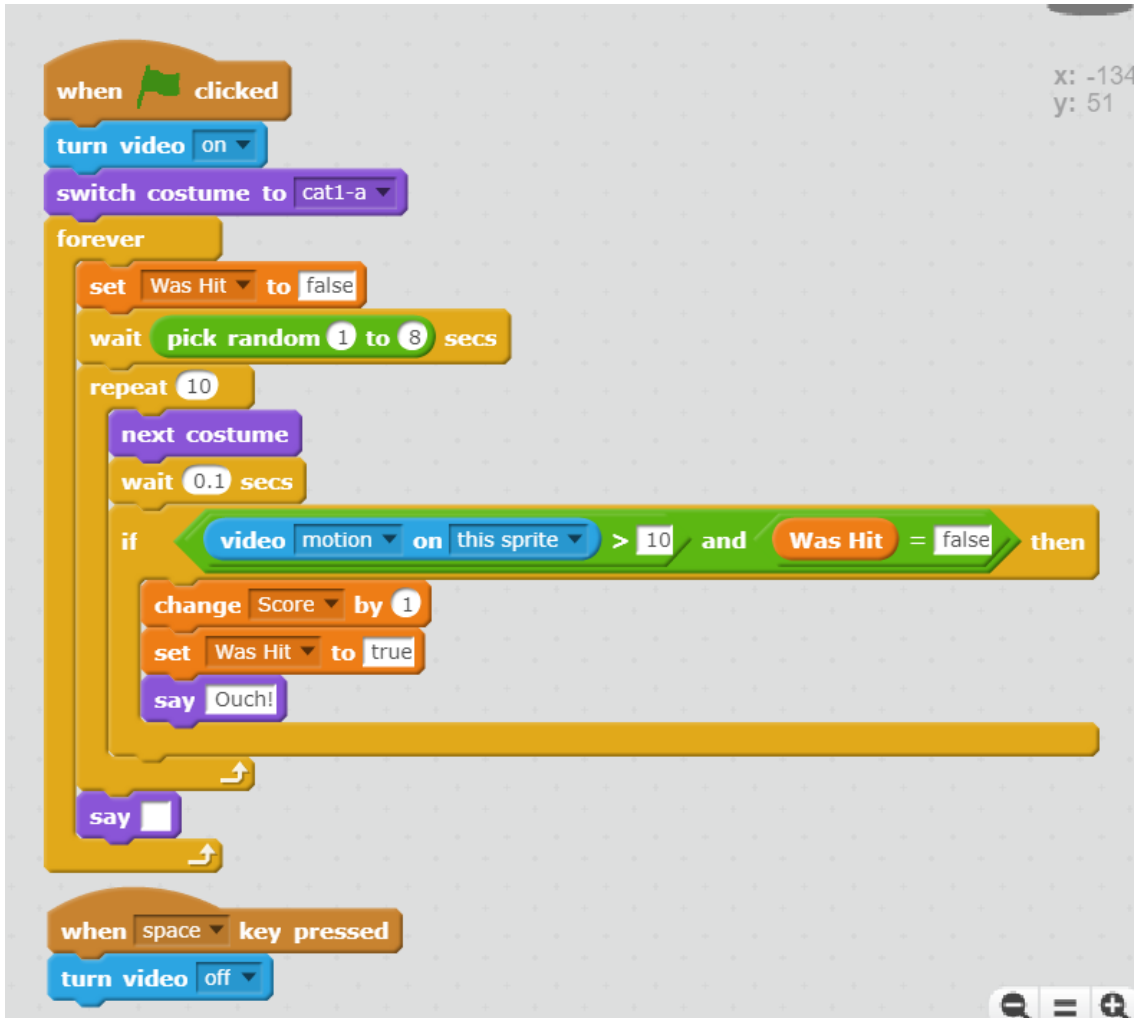
- Whack a Cat
- https://scratch.mit.edu/projects/116629018/
- Credit to “AlSweigart”

- My remix version using “video-sensing”
- https://scratch.mit.edu/projects/270301674/

Remix “Whack a Cat” game using Video sensing: Original script



Remix “Whack a Cat” game using Video sensing: sensor used



Remix “Whack a Cat” game using Video sensing: Reminder

- Make sure the video camera is on.
- Adjust the % of motion or direction to get it to respond more or less.
- The percentage of motion is from 0 to 100
- You may create a variable to show the current value

認識Scratch的新功能

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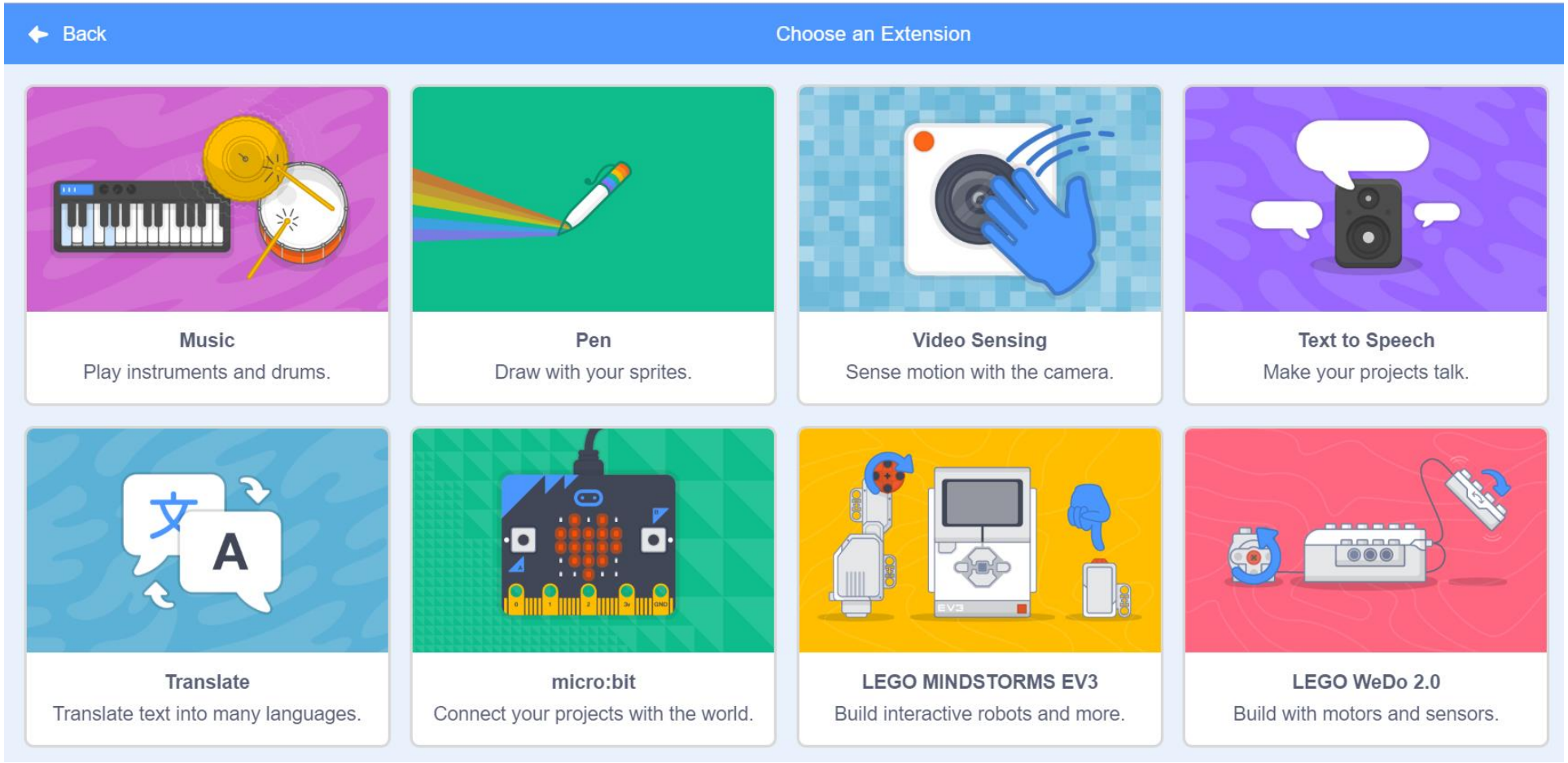

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