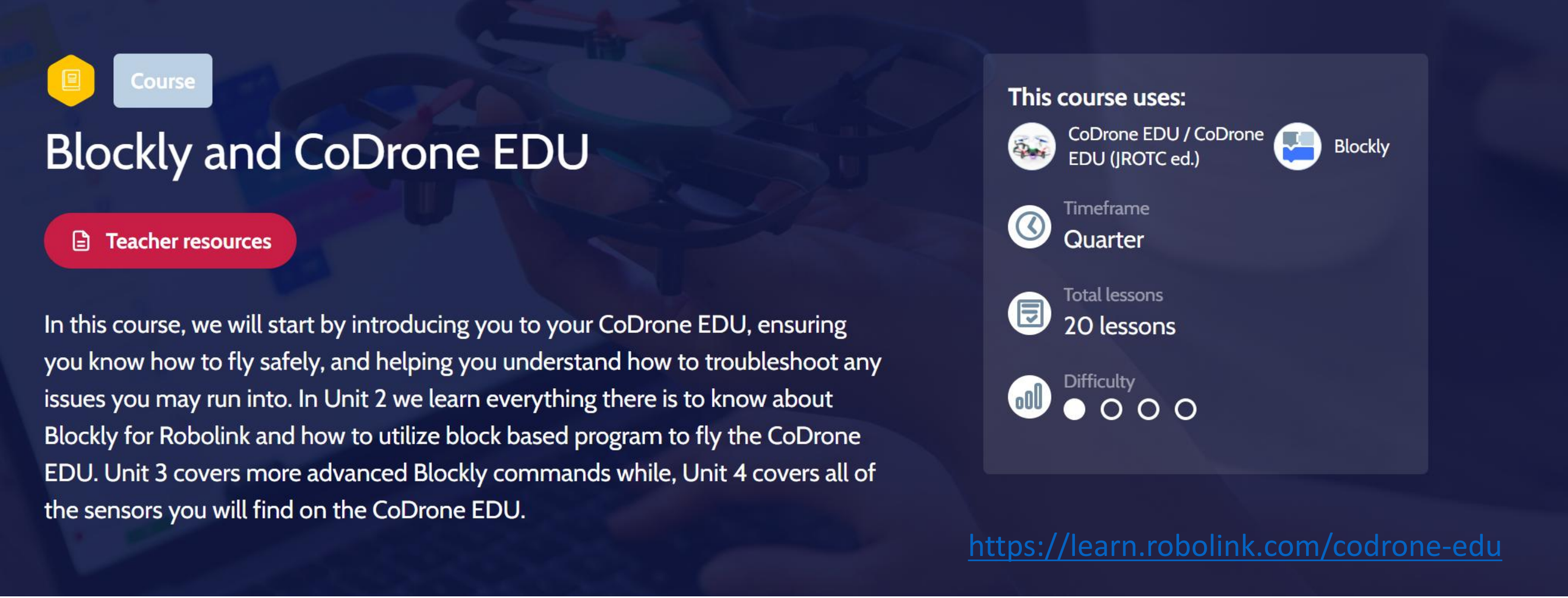
Blockly

with CoDrone EDU



https://learn.robolink.com/codrone-edu

在本課程中，我們將首先向您介紹 CoDrone EDU，確保您掌握安全飛行方法，並幫助您了解如何排除可能遇到的任何問題。在第二單元中，我們將學習關於 Robolink Blockly 的所有知識，以及如何使用基於模組的程式來操控 CoDrone EDU。第三單元涵蓋更高級的 Blockly 指令，而第四單元則涵蓋 CoDrone EDU 上的所有感測器。

Welcome to Robolink Learn 課程說明

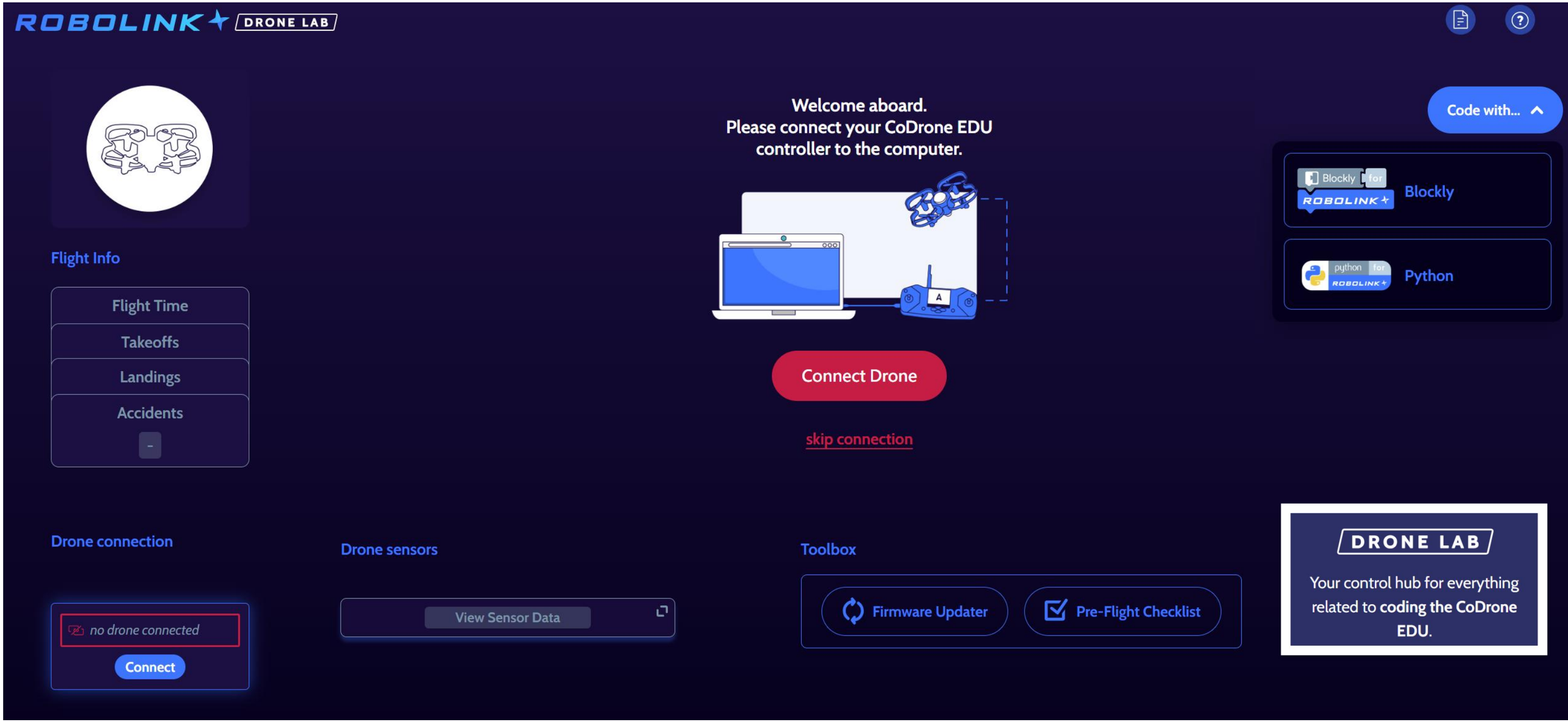
https://youtu.be/YX0CtHnmUJo

Videos every CoDrone EDU pilot should be familiar with
每位 CoDrone EDU 飛行員都應該熟悉的視頻

preview before class
課前預習知識內容

Getting to Know Your CoDrone EDU
了解您的 CoDrone EDU
https://youtu.be/AVuUzl7Sbs4
Before You Fly 飛行前準備
https://youtu.be/1jMr9CVSEq4
Powering On and Pairing 開機和配對
https://youtu.be/kMJhf5ykLSo
Charging your Batteries 電池充電
https://youtu.be/_LJPSohLVU4
The Controller (Part 1): Features
遙控器（第一部分）：功能介紹
https://youtu.be/fWdKRTGeL30
The Controller (Part 2): Settings
遙控器（第二部分）：設定
https://youtu.be/5LpmwySpo2s

Replacing Motors (standard edition)
更換馬達（標準版）
https://youtu.be/-uVii37aEYY
Replacing Propellers
更換螺旋槳
https://youtu.be/pKWpuLhehHU
Trimming Your Drone
調整無人機姿態
https://youtu.be/VmoBX3B_LCg
Connecting to a Computer for Coding
連接電腦進行程式設計
https://youtu.be/FY9zmES-GTE
Replacing the Frame
更換機架
https://youtu.be/jG123TEKuWo



https://codrone.robolink.com/?_gl=1*1ec7mxr*_ga*MTQ4MDE0Mzk1My4xNzQxNTM2Njk3*_ga_86PSRH04CX*czE3NzU5MzQ4MDkkbzMkZzEkdDE3NzU5MzU1MDYkajYwJGwwJGgw

CoDrone EDU

Drone Version

Latest Version: 25.2.1

Controller Version

Latest Version: 25.2.1

CoDrone EDU Firmware Updater

Select — Connect — Update — Done!

Prepare your drone for updating.

Follow the animation above to get your drone ready for updating, or follow the instructions below.

1. Remove the battery from the drone.
2. Plug the Micro USB cable into your computer's USB port.
3. Press and hold the Pairing button under the drone while connecting the Micro USB to the drone.
   The drone's LED should pulse blue when it's ready for updating.

☐ I've removed my drone battery and connected my drone.

Connect

CoDrone EDU Firmware Updater

Select Connect Update Done!

Success

Drone is up-to-date
Latest Version : v25.2.1

Update Controller | Done

CoDrone EDU Firmware Updater

Select Connect Update Done!

Prepare your controller for updating.

Follow the animation above to get your controller ready for updating, or follow the instructions below.

1. Remove any AA batteries from the controller.
2. Plug the micro USB cable into your computer's USB port.
3. Press and hold the H button while connecting the Micro USB port to the controller. **The screen should say "Bootloader"** when it's ready for updating.

☐ I've connected my controller while holding the H button

Connect

Unit 1 - Getting to Know Your CoDrone EDU

1.1 Introduction to CoDrone EDU
This lesson will introduce students to what drones are and how they are used. Students will also begin to familiarize themselves with the CoDrone EDU and it’s components.

1.2 Before You Fly
Safety is the number one priority of any pilot. Learn about how to fly the CoDrone EDU safely and how to prevent damage to your drone before it even leaves the ground.

1.3 The Controller
Learn the fundamentals of the controller, including what the buttons do, what the settings are, and how to pilot your drone. If it's your first time using the CoDrone EDU, you will definitely want to go through this lesson before flying.

1.4 Troubleshooting
As with any technology, sometimes students might run into issues that they have to work through. This lesson teaches students the skills to troubleshoot different scenarios that may arise while using the CoDrone EDU.

單元 1 - 了解您的 CoDrone EDU

1.1 CoDrone EDU 簡介
本課將向學生介紹無人機的概念及其用途。學生還將開始熟悉 CoDrone EDU 及其組件。

1.2 飛行前準備
安全是所有飛行員的首要任務。學習如何安全操控 CoDrone EDU，以及如何在無人機起飛前防止損壞。

1.3 遙控器
學習遙控器的基本操作，包括按鈕功能、設定選項以及如何操控無人機。如果您是第一次使用 CoDrone EDU，強烈建議您在飛行前學習本課。

1.4 故障排除
與任何技術一樣，學生有時可能會遇到需要解決的問題。本課程將教導學生在使用 CoDrone EDU 時排除各種故障的技能。

https://learn.robolink.com/codrone-edu/codrone-edu-and-blockly-for-robolink

Unit 2 - Introduction to Blockly for Robolink

2.1 Welcome to Blockly
Before we jump into programming using Blockly for Robolink, let's learn about how it works and all of it's features.

2.2 Flight Commands
The first flying lesson using code! In this lesson, you'll learn the very first skills needed for controlling your drone with code. Learn how to take off, hover, rotate, and land.

2.3 Advanced Flight Commands
This lesson builds upon the last flight commands lesson. It teaches students how to use the commands that specify roll, pitch, throttle, and yaw.

2.4 Lights and Sounds
Learn how to program the drone's LED to make different light patterns. Also, learn how to program the buzzer to make various sounds, sound effects, and even some jingles.

第二單元 - Blockly for Robolink 入門

2.1 歡迎使用 Blockly
在開始使用 Blockly for Robolink 進行程式設計之前，讓我們先來了解一下它的工作原理和所有功能。

2.2 飛行指令
第一堂飛行代碼課！在本課中，你將學習使用程式碼控制無人機所需的最基本技能。學習如何起飛、懸停、旋轉和降落。

2.3 進階飛行指令
本課建立在上一堂飛行指令課的基礎上。它將教你如何使用指定橫滾、俯仰、油門和偏航的指令。

2.4 燈光和聲音
學習如何對無人機的 LED 燈進行編程，使其呈現不同的燈光模式。此外，還將學習如何對蜂鳴器進行編程，使其發出各種聲音、音效，甚至一些鈴聲。

https://codrone.robolink.com/edu/blockly/

Unit 3 - Control Structures in Blockly

3.1 Variables in Blockly
This lesson teaches students how to create and initialize variables in Blockly. It also introduces the concept of data and types of data. They will use variables to modify programs that they previously created.

3.2 Conditionals in Blockly
This is the first of two lessons that introduces the concept of conditionals. This lesson covers relational operators, if statements, logic operators, and if else statements.

3.3 Conditionals Continued
This lesson builds upon the first conditionals lesson. It starts by teaching the Else If command then demonstrates how to use boolean operators with conditional statements.

3.4 Loops
This lesson covers the basics of utilizing loops with the CoDrone EDU.

3.5 Functions
Functions can be used to simplify programs and reuse chunks of code more easily.

第三單元 - Blockly 中的控制結構

3.1 Blockly 中的變數
本課程教導學生如何在 Blockly 中建立和初始化變數。它也介紹了資料的概念和資料類型。學生將使用變數來修改先前創建的程式。

3.2 Blockly 中的條件語句
這是介紹條件語句概念的兩堂課中的第一節。本課程涵蓋關係運算子、if 語句、邏輯運算子和 if else 語句。

3.3 條件語句（續）
本課程建立在第一節條件語句課程的基礎上。它首先講解 else if 指令，然後示範如何在條件語句中使用布林運算子。

3.4 循環
本課程涵蓋在 CoDrone EDU 中使用循環的基礎知識。

3.5 函數
函數可以用來簡化程序，並更輕鬆地重複使用程式碼區塊。

Unit 4 - Sensors in Blockly

In this unit, students will be introduced to an introduction of AI and learn how to utilize the sensors on the CoDrone EDU. The CoDrone EDU is equipped with 7 sensors that can be programmed to retrieve data and make decisions based on the data returned.

4.1 Introduction to Sensors in Blockly
his lesson gives an overview of what sensors are and what sensors are on the CoDrone EDU.

4.2 The Color Sensors
The color sensors can be utilized while the drone is landed on a surface. This lesson explains how the color sensor works and how to use it.

4.3 The Battery in Blockly
The battery is such an important part of flying the CoDrone EDU, but how can we optimize our battery power while flying?

4.4 Other Sensors

Unit 5 - Mission Challenge

第四單元 - Blockly 中的感測器

在本單元中，學生將初步了解人工智慧，並學習如何使用 CoDrone EDU 上的感測器。 CoDrone EDU 配備了 7 個感測器，這些感測器可以被編程來獲取數據並根據返回的數據做出決策。

4.1 Blockly 中的感測器簡介
本課程概述了感測器的概念以及 CoDrone EDU 上配備的感測器。

4.2 顏色感測器
顏色感測器可用於無人機降落在地面上時。本課將解釋顏色感測器的工作原理以及如何使用它。

4.3 Blockly 中的電池
電池是 CoDrone EDU 飛行過程中至關重要的部件，那麼我們如何在飛行過程中優化電池電量呢?

4.4 其他感測器

第五單元 – 任務挑戰