CoDrone Curriculum

Step 1: Introduction to CoDrone!

Learn about CoDrone by watching the following videos

[CoDrone Intro Video](#)

[CoDrone Safety](#)

[System Requirements and Learning to Pair](#)

There are two different types of CoDrones, the CoDrone Lite and CoDrone Pro. The CoDrone Light can only run Blockly while the CoDrone Pro can run Blockly and Arduino. Make sure to use the right drone for the right steps!

The CoDrone batteries last for about 7 minutes of flight time and take around 40 minutes to charge. You should have multiple batteries available to you so make sure you charge them as you go!

Step 2: Programming in Blockly (Junior Circuit)

Once you've been introduced to CoDrone, you're ready to jump into the programming! You can start by clicking on the CoDrone Workbench link below which will bring you to a menu as shown in the image below. You'll also want to open up the Blockly online webpage where you will do your programming.

- [CoDrone Workbench](#)
- [Blockly Webpage](#)

You'll want to start on "1A. Flight Events" which is circled in the image below. This tutorial will explain the basics of what is required for a CoDrone program in Blockly.
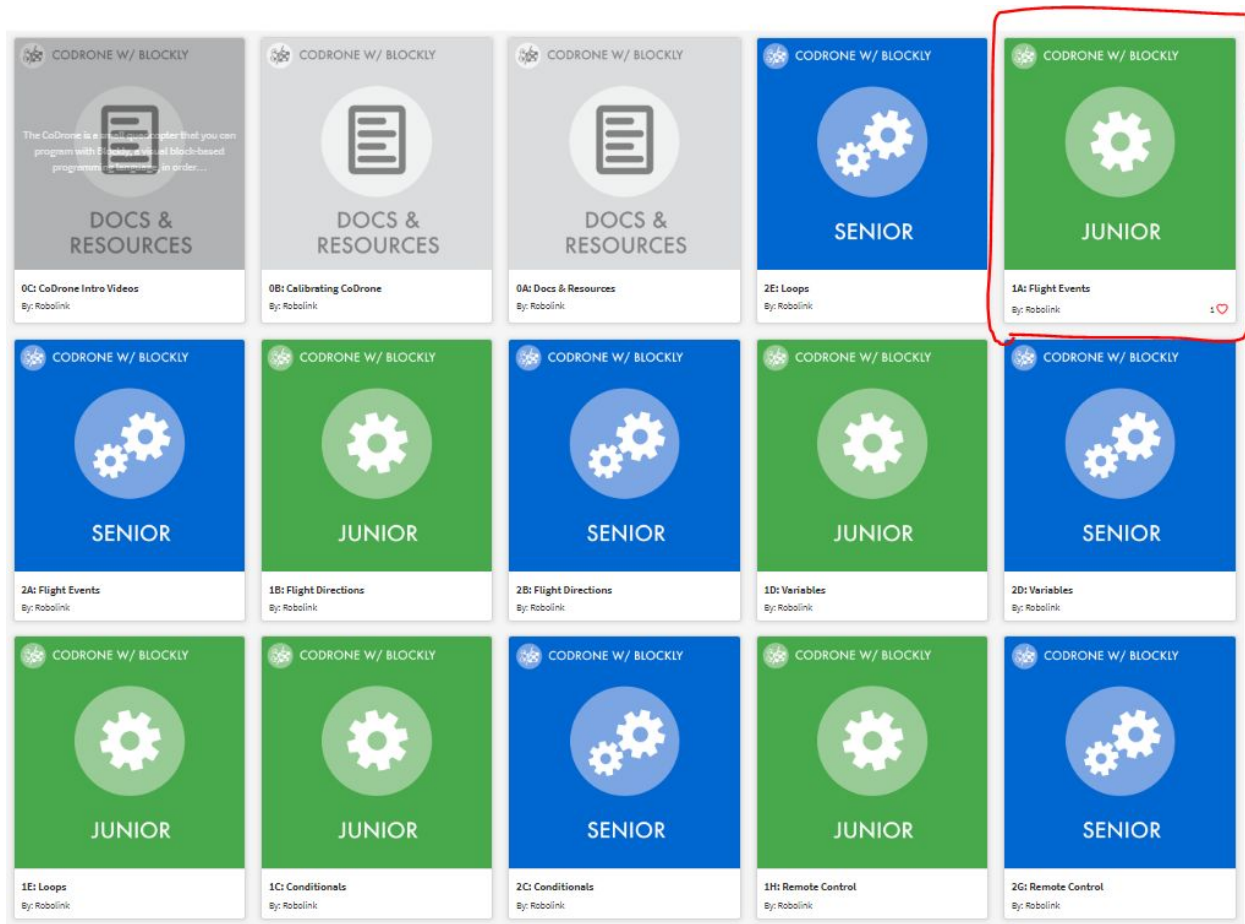
Once you've completed "1A. Flight Events" you'll notice the "Next Lesson" button at the bottom of the page as shown in the image below. Click this to continue learning how to program your CoDrone!

Continue moving through all the lessons until you reach the end of the Junior Circuit!

[Optional] Step 3: Programming in Blockly (Senior Circuit)

If you enjoy the programming aspect of CoDrone, continue to learn more cool tricks! The more you know, the more tricks you'll have in your toolkit for the challenges later on. Repeat the steps from above, starting with "2A. Flight Events" and work your way through the Senior Circuit.

[Optional] Step 4: Programming in Arduino

If programming is your thing, experiment by programming CoDrone Pro in Arduino! The steps are similar to those above. Click on the Arduino Workbench link below, and work your way through the Beginner and Advanced lessons until you become a pro!

Arduino Workbench

For the CoDrone Pro, it's important that you carefully assemble your CoDrone Remote. Click on the following link for instructions on how to do that. A lot of the components are breakable so make sure to be careful! There is also a tutorial for how to use the CoDrone remote which is also linked below.

[CoDrone Remote Instructions](#)

[CoDrone Remote Tutorial](#)

Step 5: Programming Challenges!

Now that you're a CoDrone programming master, we're going to put your skills to the test with a series of challenges.

Challenge #1: Island Hopping

For this challenge, you will need to find an open space with a flat floor. You'll need to place your islands around your open space by placing up to 5 stacks of books or chairs/stools on the floor in random locations. For an extra challenge, make your islands all a different height. Once everything is in its place make sure you don't move it!

Now that your islands are in place, your objective is to land your CoDrone on each island, and then take off to the next one. You want to make sure you touch every island before returning to where you started.

Bonus Challenge: Try to write a loop so your CoDrone continuously flies from island to island!

Bonus Challenge: See how fast you can get your CoDrone hopping from Island to Island!

Challenge #2: Rescue Mission

For this challenge you'll need two 6" strips of clear tape, or masking tape (Not Duct Tape!). If you use masking tape, make sure it's less than 1" wide. Rip it in half the long way if you need to!

You will carefully attach the tape to the CoDrone propeller guard and roll the tape against itself so the sticky side is out. This is shown in the picture below with the tape represented by the red lines.

You will also need to take a sheet of paper and rip it into tiny pieces. The pieces should be about 1" by 1". Once you have all the pieces ripped up, put them inside of a box or bowl and place the box/bowl on a flat surface.

The objective of this mission is to "rescue" as many pieces of paper from their zone, as possible. Your CoDrone will start in a starting zone about 5 feet away from your pile of papers. You will program your CoDrone to take

off, retrieve the papers by getting them to stick to your tape, and then return to your home base and land. Once your CoDrone lands, you can grab all the papers off the tape and put them in a pile where they are safe. Place your CoDrone back in its starting zone and run your program again.

You will have 3 minutes to rescue as many pieces of paper as you can. Set a timer at the beginning and stop once it goes off.

0 Pieces of Paper: You have some work to do!
2 Pieces of Paper: great job, but you can do better
5 pieces of Paper: You must be an expert programmer!
10 Pieces of Paper: You're a CoDrone master!

Step 6: Become a Drone Pilot!

Once you've mastered the skills of programming your CoDrone, you've earned the right to become a Drone Pilot! The first step in becoming a Drone Pilot is downloading the Petrone App which is available on the Play Store and App Store as seen in the picture below.

Once you have the app downloaded, it will ask you to create an account. You can just hit skip, and it will take you into the app. The screen should look like this, but will have a CoDrone listed if your drone is on and nearby. You'll want to click on that drone to pair with it!

The app will give you the option to choose between the following options… we don't have a FPV kit so choose the left option.

You have the option to choose between solo play and battle play. If you have two people, battle play is a lot of fun! If you are alone or want to just practice flying, click on solo play.
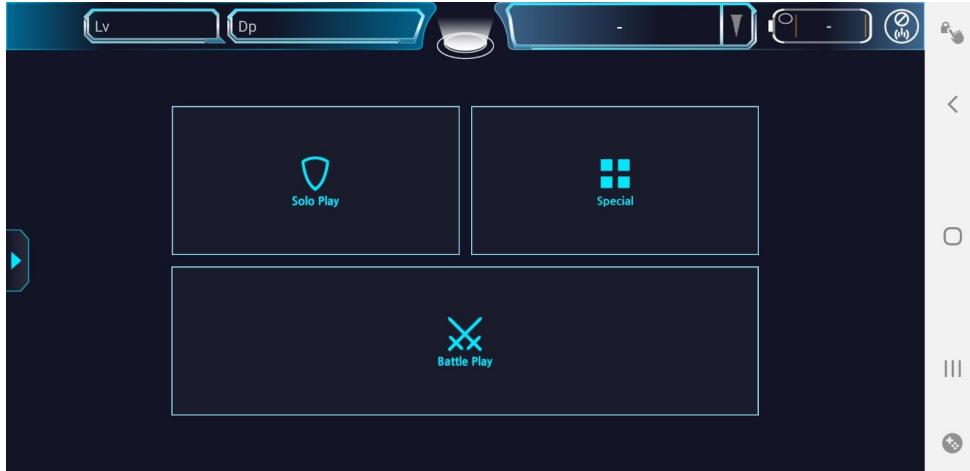
The following video shows what Offline Battle Play looks like!

[Battle Play](#)

Troubleshooting:
- [Calibrating the CoDrone](#): Do this if the Drone is drifting or otherwise behaving weirdly

If you finish all of the content above, contact ryan.john.swanson@gmail.com