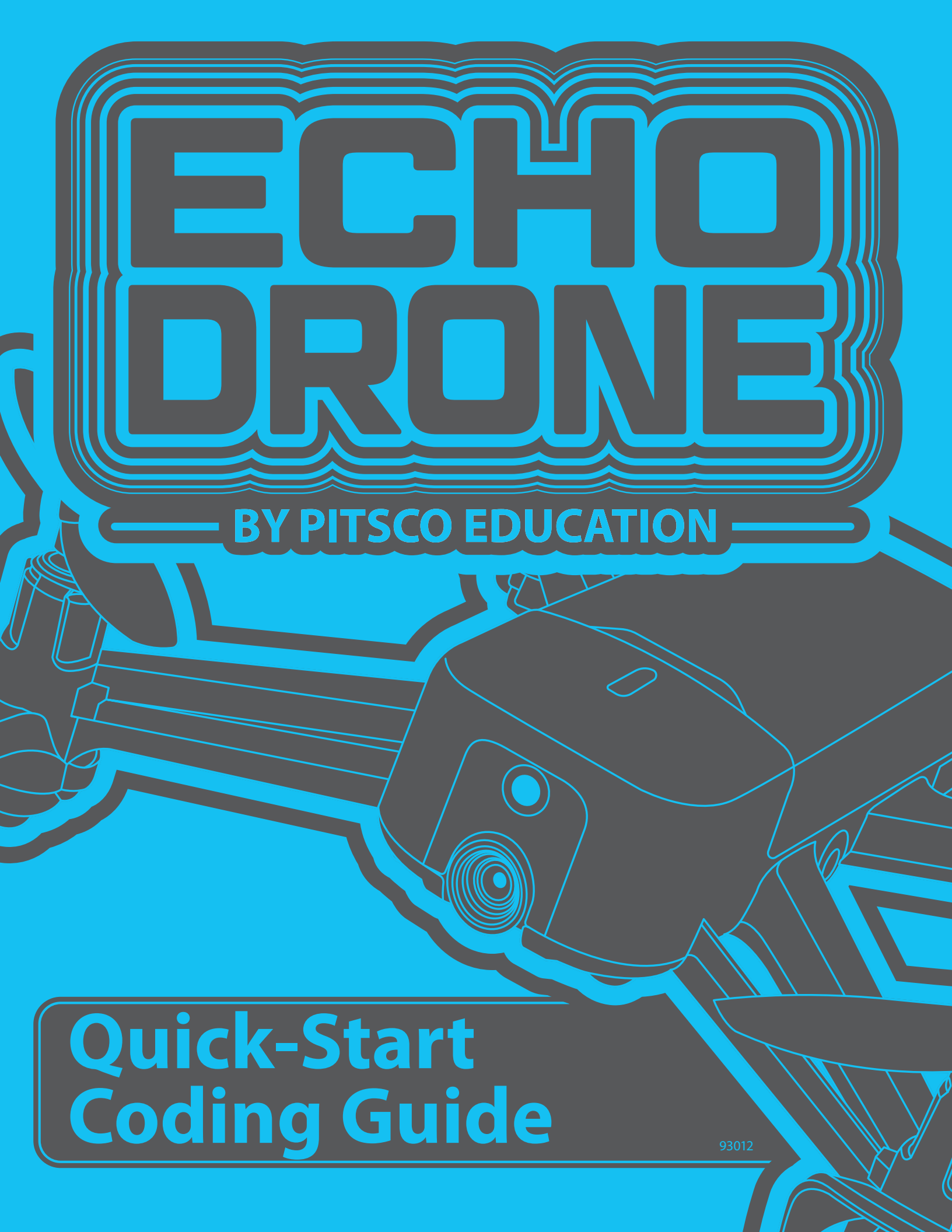
ECHO DRONE

BY PITSCO EDUCATION



Quick-Start Coding Guide

93012

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TABLE OF CONTENTS

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SAFETY INFORMATION

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This kit is designed and intended for educational purposes only.
- Use only under the direct supervision of an adult who has read and understood the instructions provided in this user guide.
- Read warnings on packaging and in manual carefully.
- If chargers, wires, plugs, shells, or other parts are found damaged, please discontinue their use until they are repaired or replaced.
- The Echo Drone may be cleaned with a clean and soft cloth. Disconnect the charger before cleaning.
- Remove the battery before storing the drone for a long period of time to retain its charge life and avoid risk of battery leakage.
- Be sure to check your surroundings before and during flight.
- Do not let the drone fly out of sight.
- Do not fly the drone in these conditions:
  - Near cell towers, high voltage lines, trees, or bodies of water
  - Near airports, railways, roads, or highways
  - Above people or animals
  - In heavily populated areas
  - During inclement weather or in windy conditions

ACCESS THE APP

Welcome to your Echo Drone coding experience! This drone can be controlled and coded via an app downloaded to the device of your choice. **Please note:**

- The drone's controller will not work if the drone is connected to your device.
- The app control will not work if the drone is paired to a controller.

DOWNLOAD THE APP

Download the App

Different apps will work for different devices. The Tspeed 7 app can be used with mobile devices. The AT-66BL app is compatible with PC/Windows and Chromebooks.

Scan the QR code or visit **Pitsco.com/Echo-Drone#downloads** to locate the app appropriate for your device. Or, you may download the app from the appropriate app store:

- For iOS devices 10.0 and above, download the Tspeed 7 app from the App Store.
- For Android devices 4.4 and above, download the Tspeed 7 app from the Google Play store.
- For PC/Windows 10 devices version 1836.0 or higher, download the AT66BL-UWP app from the Microsoft store.
- For Chromebooks, download the AT-66BL app from the Google Play store.

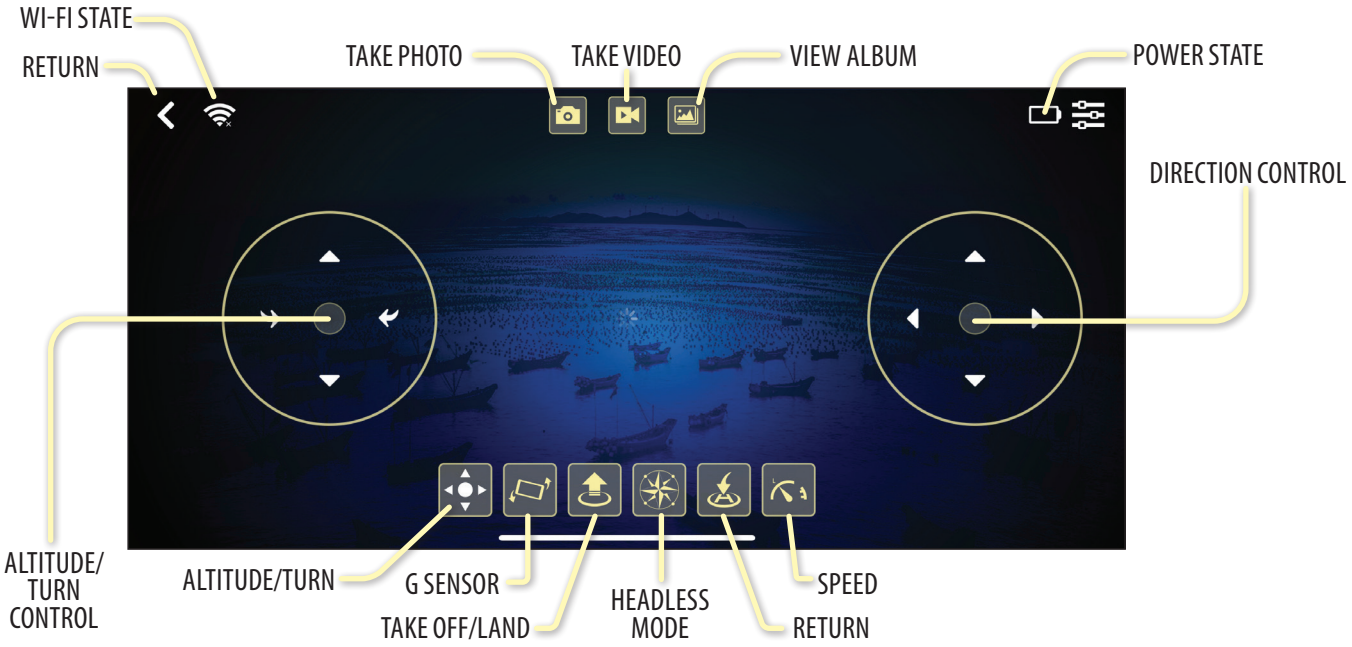
Connect to Wi-Fi

To connect your drone to your device:

1. Turn on your drone.
2. Connect your device's Wi-Fi to the drone. The Wi-Fi will be "Tspeed7-XXXXX" or similar, depending on your app. **Note:** Your device settings might say there is no Internet connection, which is correct; your device is now connected to the drone, and will be unable to access the Internet.
3. Open the app. Real-time image transmission should appear in the app.
4. You may need to enable the app's access to your location so the drone will be able to tell where the pilot is.

Control Interface

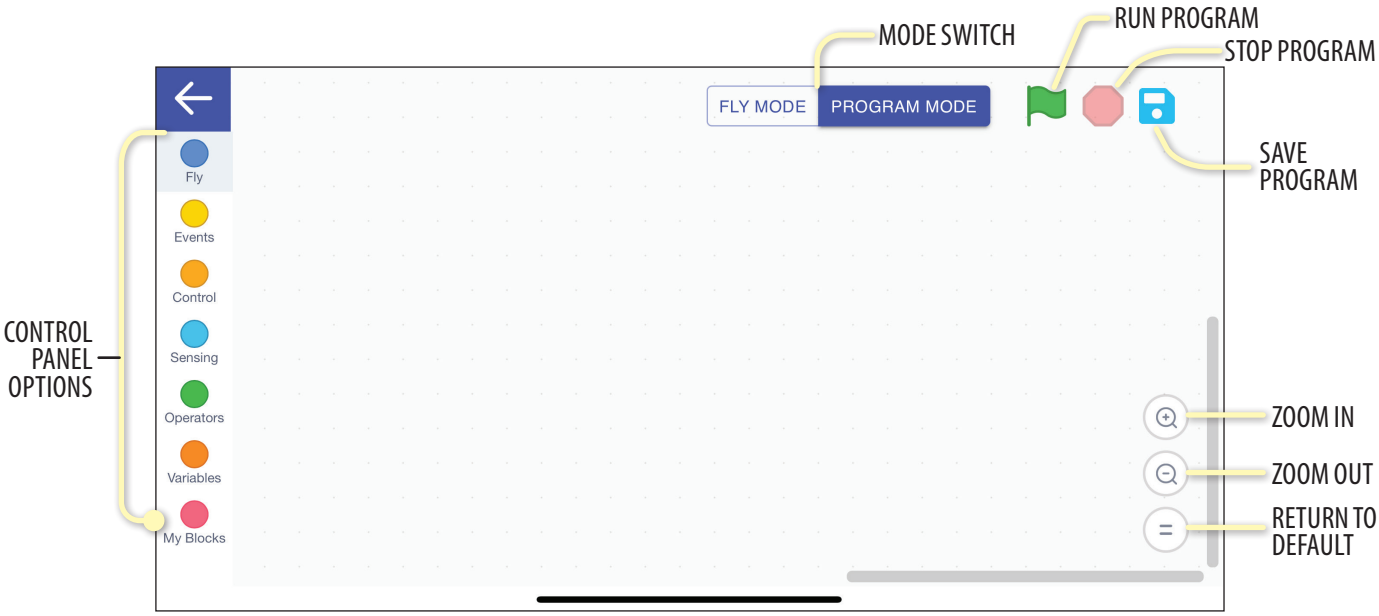
Tap **Control** in the app's main menu to view the control interface. From this view, you can control the drone in R/C mode.



BLOCK INTERFACE AT A GLANCE

Tap **Program** in the app's main menu to view the programming interface. From this view, you can control the drone's actions using drag-and-drop block-based code.

- Choose your blocks using the panel categories on the left side of the screen.
- In the top-right corner:
  - Tap/click the green flag to run the program.
  - Tap/click the red stop sign to stop the program.
  - Save your work using the save icon.
- To create a program, tap/click into a control panel category, hold down a block, drag it to the blank interface, and let go to drop it.
- Build your program by repeating this process as many times as needed, connecting blocks in the order of your choosing. Be sure to start with clicking the green flag and end with landing the drone.
- You can delete unused or incorrect blocks by dragging them one at a time back to the left control panel.

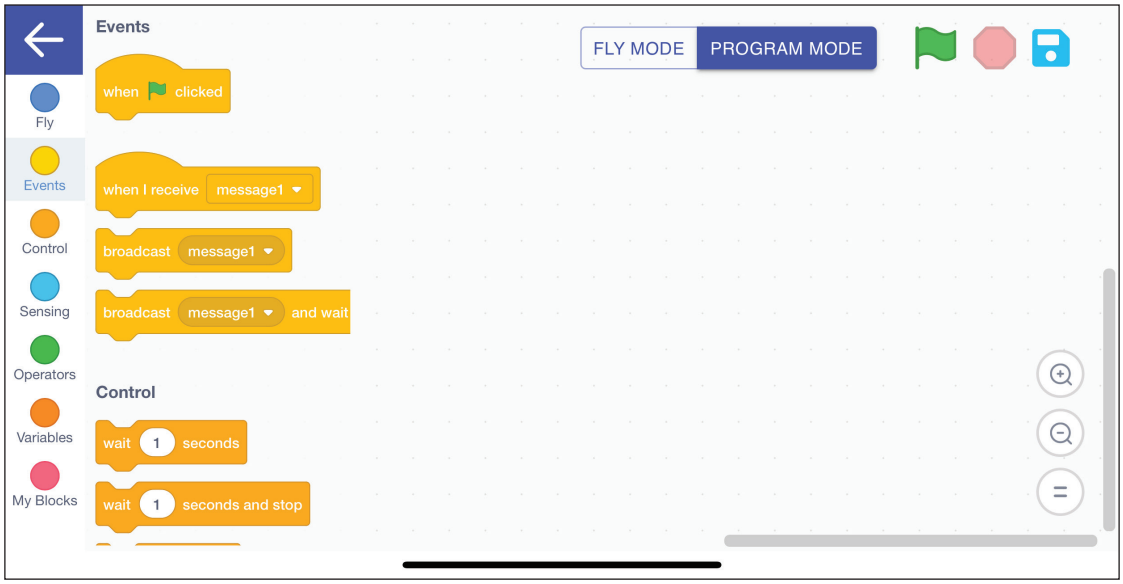


The following sequence of code is an example of how to program your Echo to fly in a square. This will provide practice in the Fly panel, Events panel, and Control panel and is a great entry point for beginner coders.

FLY IN A SQUARE

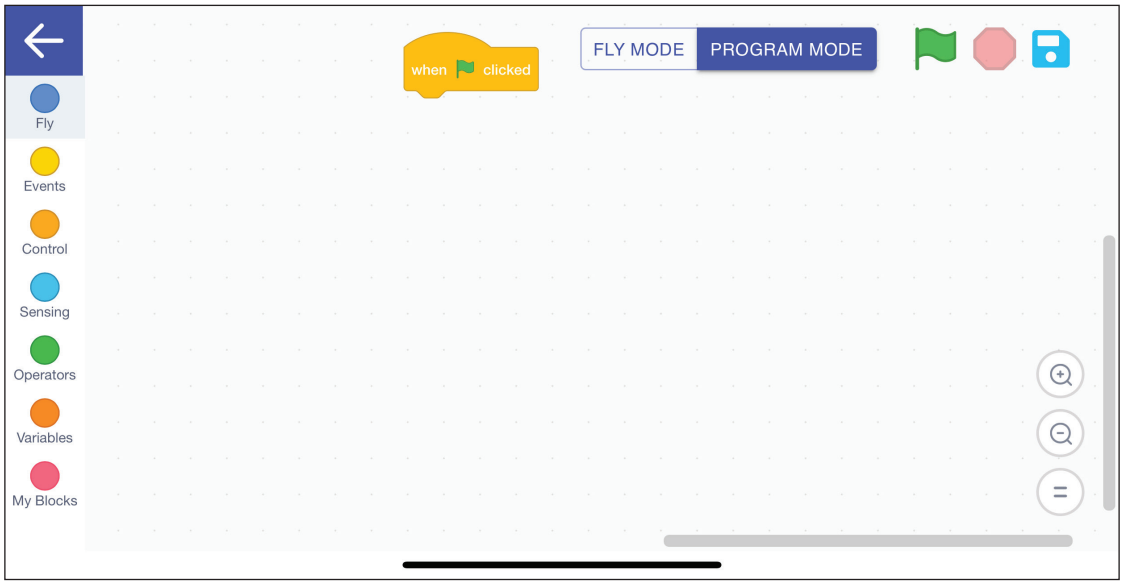
1. To begin, open the Events panel.

Use the Event panel's blocks to tell the drone what to do when certain events happen.



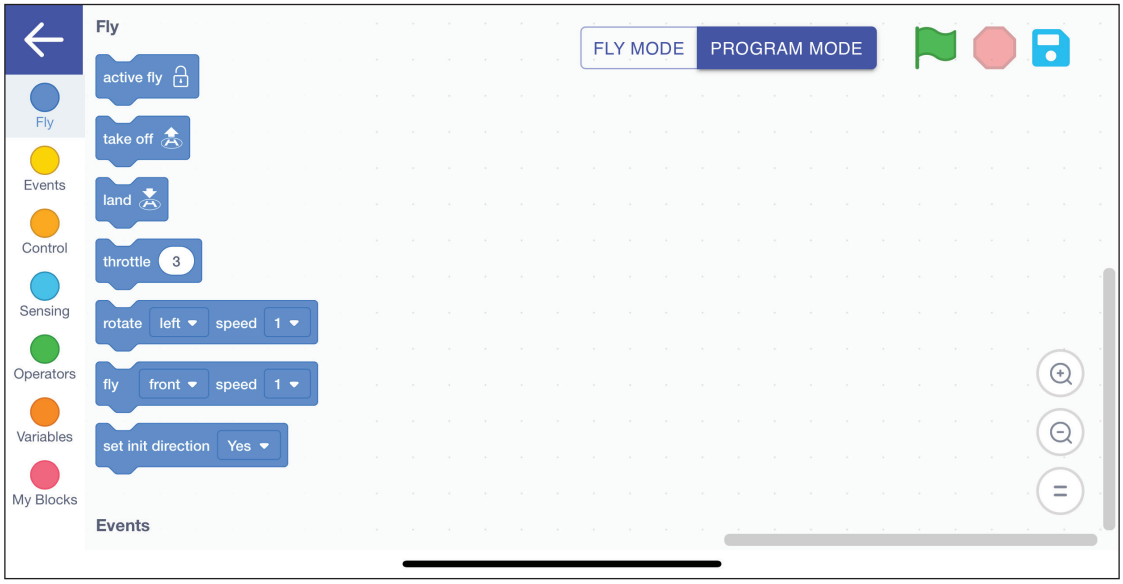
2. For your program to work, you will need to begin by selecting the top event containing an image of a green flag. The **when clicked block** is a necessary predecessor to all the blocks that will follow it. Without this block, your sequence of code will not communicate from the app to the drone.

Click and drag this block into the Program Mode sandbox located in the blank white space of your screen.

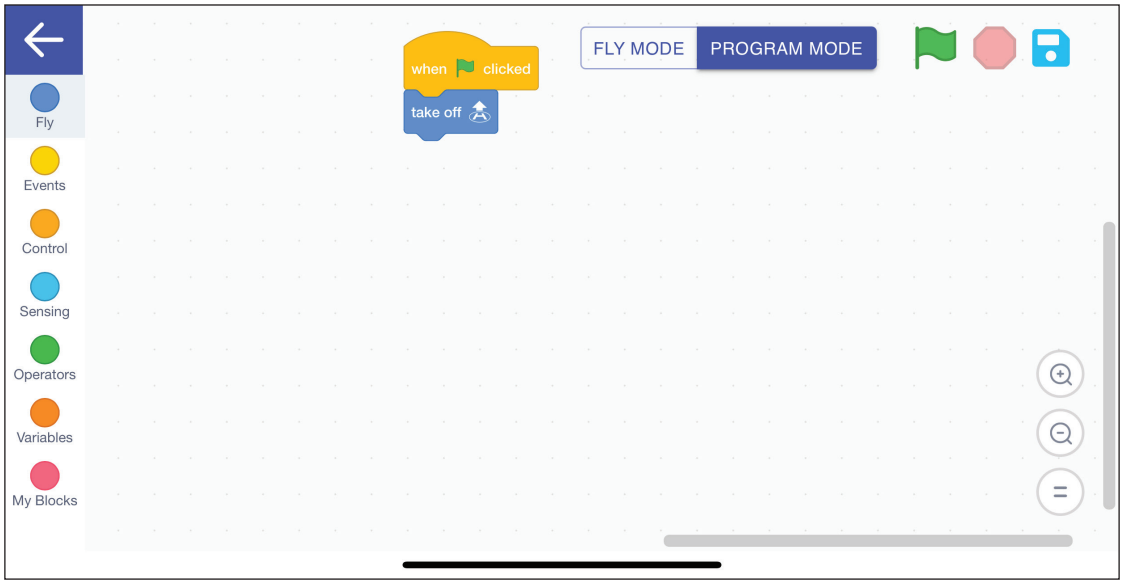


3. Navigate to the Fly panel.

The Fly panel is where you'll find take off, land, steering, and other command blocks.



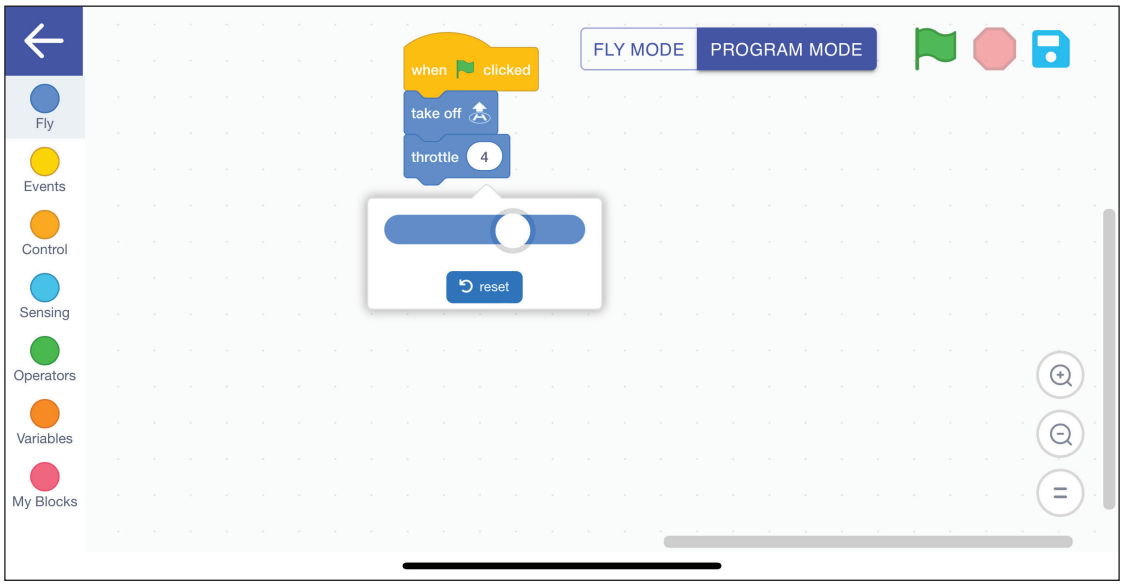
4. The next block to include in your sequence is the **take off block**. This allows the drone to become airborne. Click and drag this block below the **when clicked block**. The two blocks will connect to each other like puzzle pieces.



5. Next, include the **throttle block**, which instructs the drone on how many seconds it should fly upwards into the air after takeoff. The higher the number you enter, the higher the drone will fly and then hover. Drag and drop this block under the **take off block**.

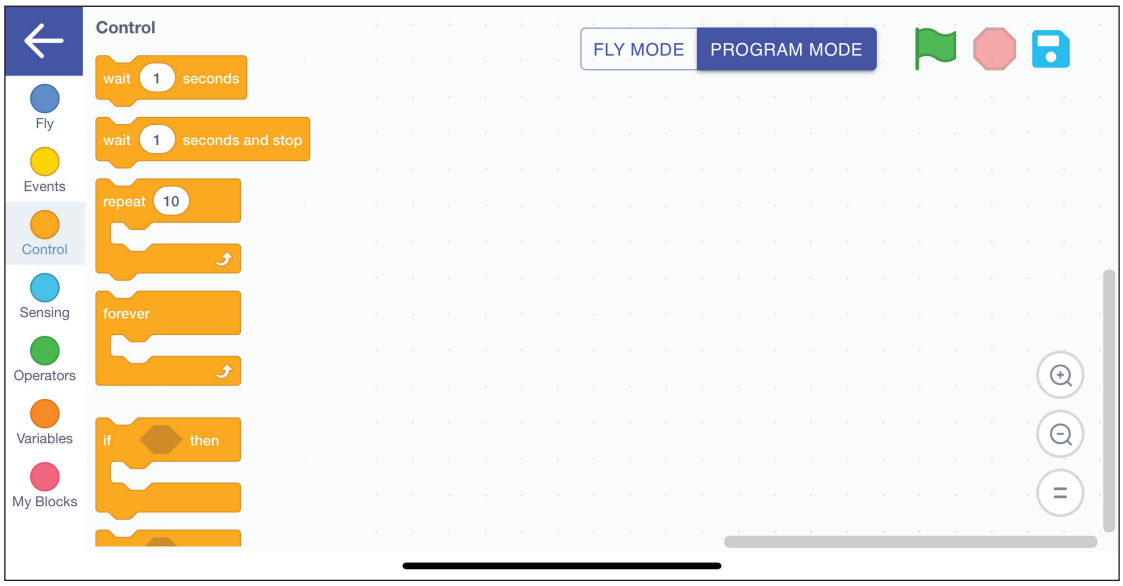
For these purposes, select a throttle height of four seconds.

To change the number of seconds, click the block in the sandbox and an adjustable bar will appear. Use the bar to slide the throttle left for a lower height or right for a higher height. When you have the height you would like, click anywhere in the sandbox to make the bar disappear. To change the throttle height again, simply click the block to make the adjustable bar reappear.

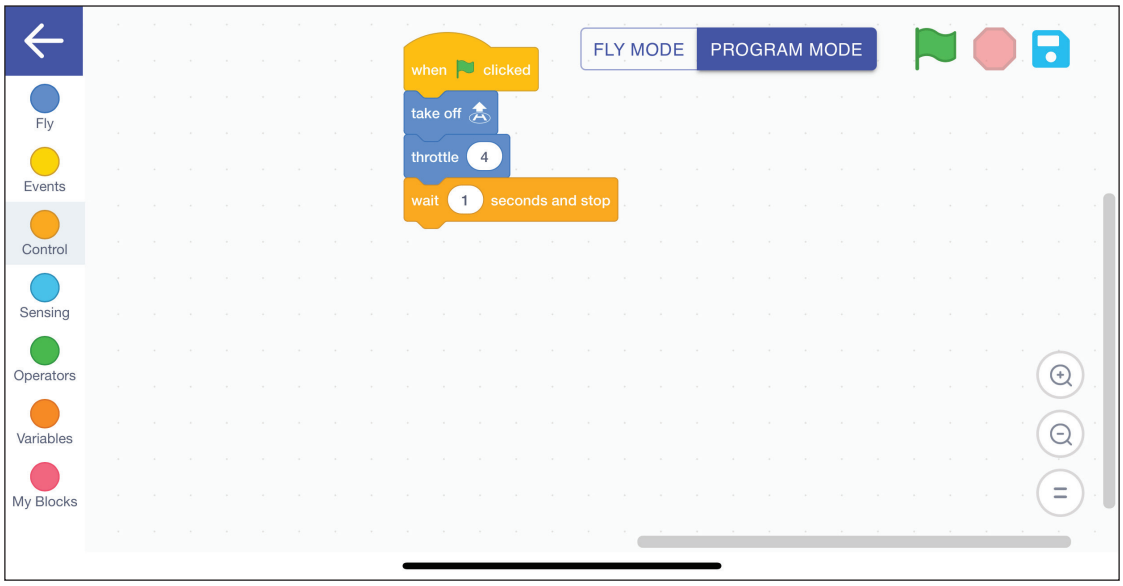


6. Navigate to the Control panel, where you will select the **wait seconds and stop block**.

The Control blocks include if-then, wait, and repeat statements.

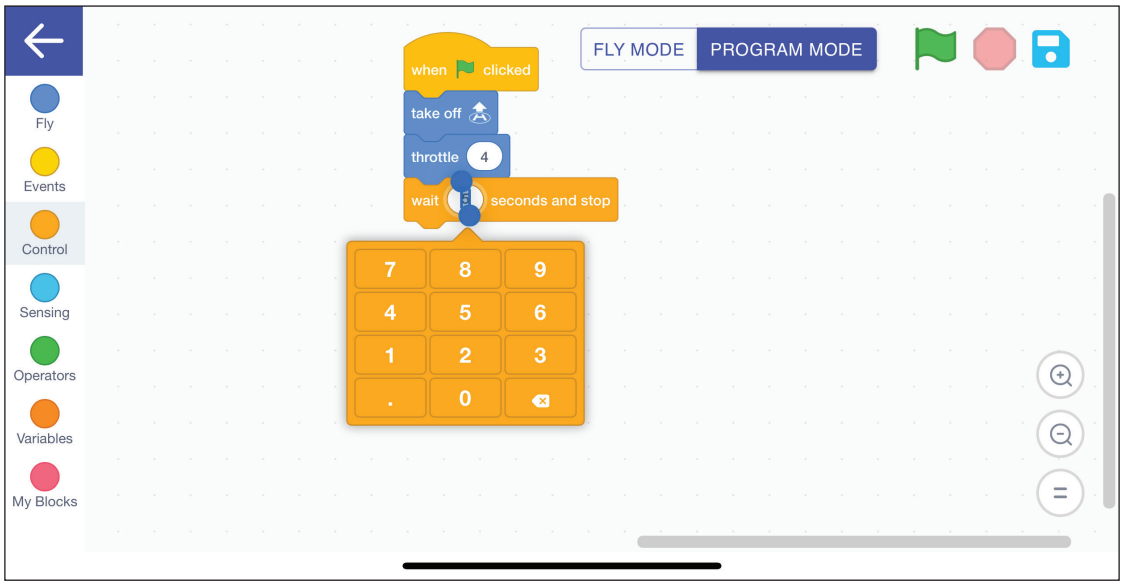


7. The **wait seconds and stop block** instructs the drone on how long of a delay to execute in between commands. This block helps to counteract drift that might occur during flight.



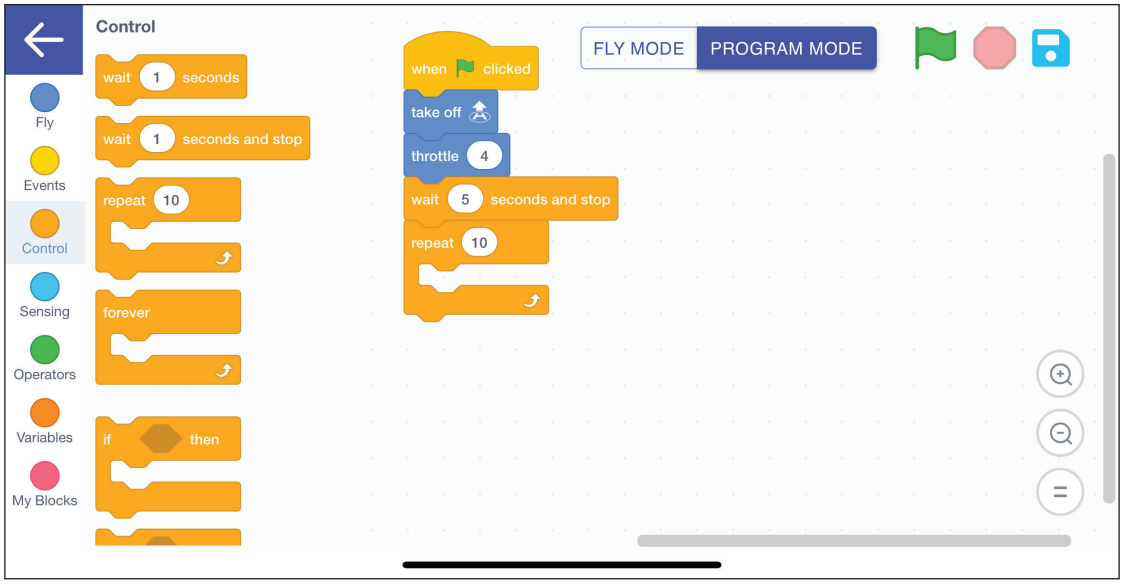
8. Input a wait time of five seconds for your sequence. To change the number of seconds, click the block in the sandbox, and a nine-digit key panel will appear. Use the delete button to remove the previous number, enter the new number you would like, and then click anywhere in the sandbox to make the panel disappear. To change this number again, simply click the block to make the nine-digit key panel reappear.

Note: You can use decimals to help increase precision.



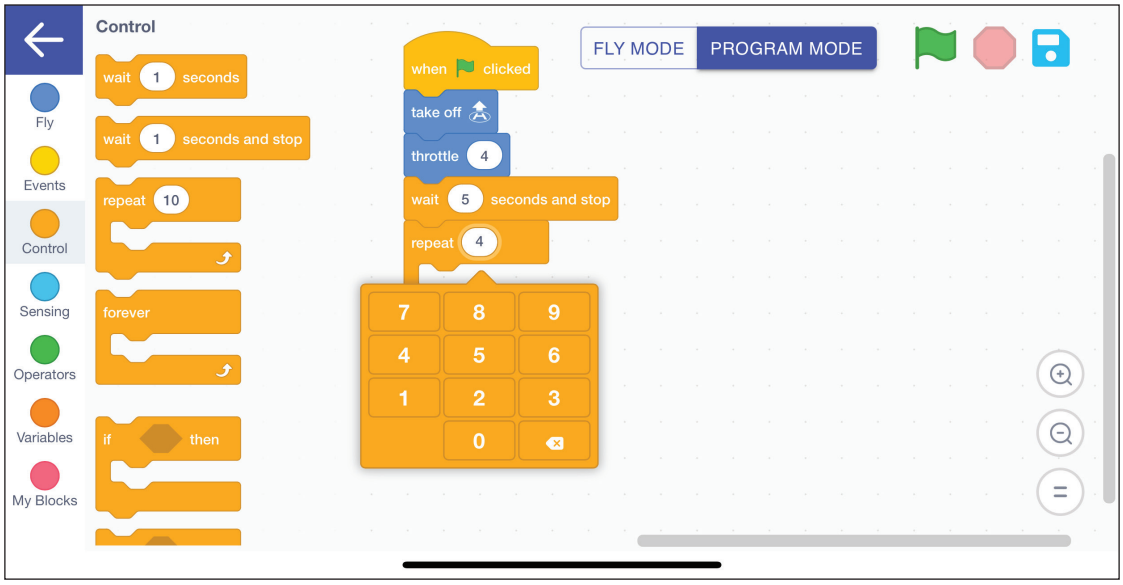
9. For the next section of this sequence, the drone should fly in one direction, turn at a 90-degree angle, fly in that direction, turn again, and repeat until it has flown all four sides of a square.

To help shorten the number of blocks necessary to complete this, remain in the Control panel and select the **repeat block**.



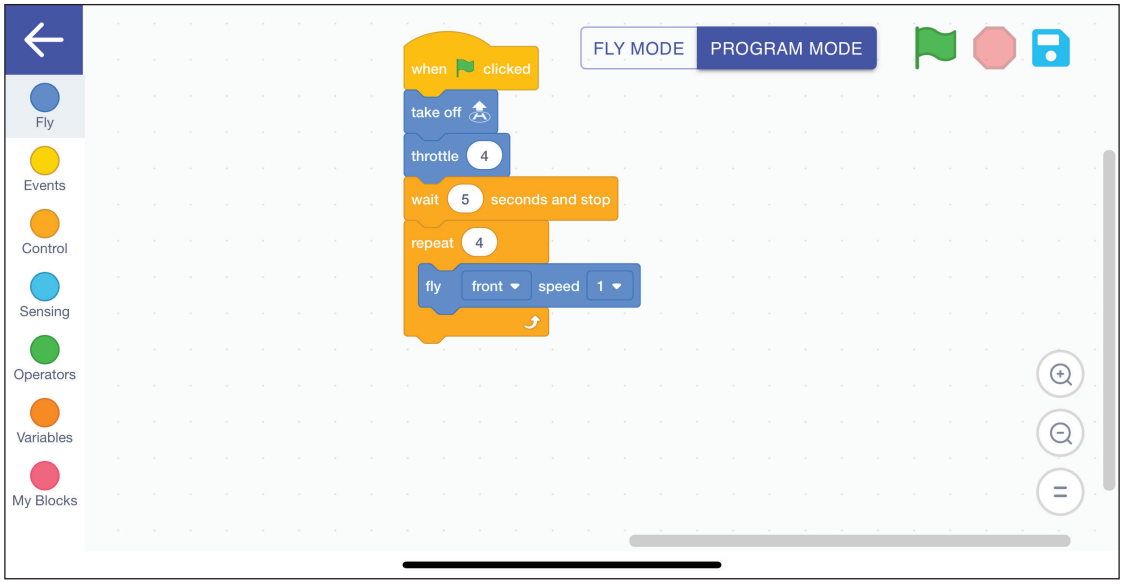
10. To change the number of times your sequence will repeat, click the block in the sandbox, and a nine-digit key panel will appear. Use the delete button to remove the previous number, enter the new number you would like, and then click anywhere in the sandbox to make the panel disappear. To change this number again, simply click the block to make the nine-digit key panel reappear.

This sequence should repeat four times.



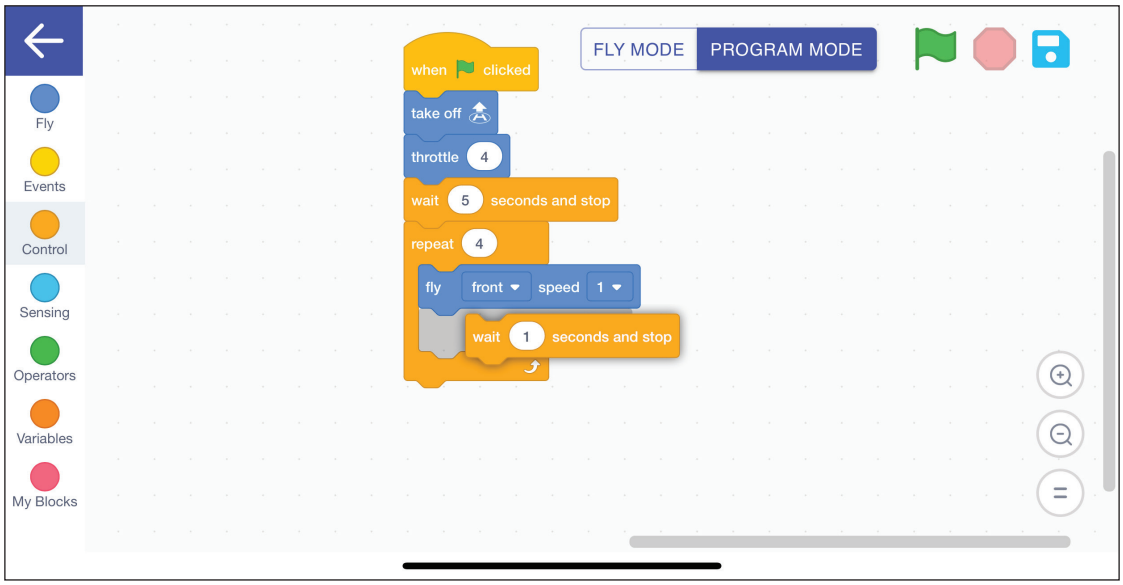
11. To input the blocks that will repeat, navigate back to the Fly panel, select the **fly speed block**, and drop it into the small gap of the **repeat block**.

For your sequence, leave the default of **fly front speed 1** on the block. However, both the direction and speed can be changed by clicking the block and selecting a different option from the drop-down menu.



12. After the drone has flown forward, it should stop briefly before it begins to rotate 90 degrees; this will help counteract drift.

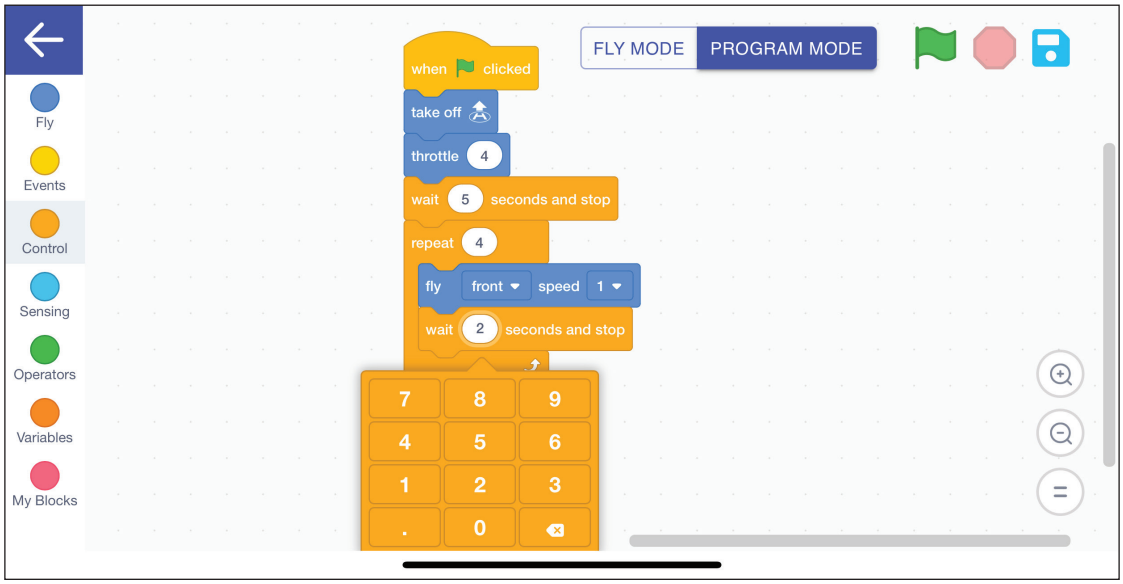
Return to the Control panel. Drag the **wait seconds and stop block** into the sandbox and hover it over the **fly speed block**. This will create a gap that you can drop this block into.



13. For this sequence, the drone should wait for two seconds.

Click the **wait seconds and stop block** and use the nine-digit key panel to change the time to two seconds.

Note: You can use decimals to help increase precision.

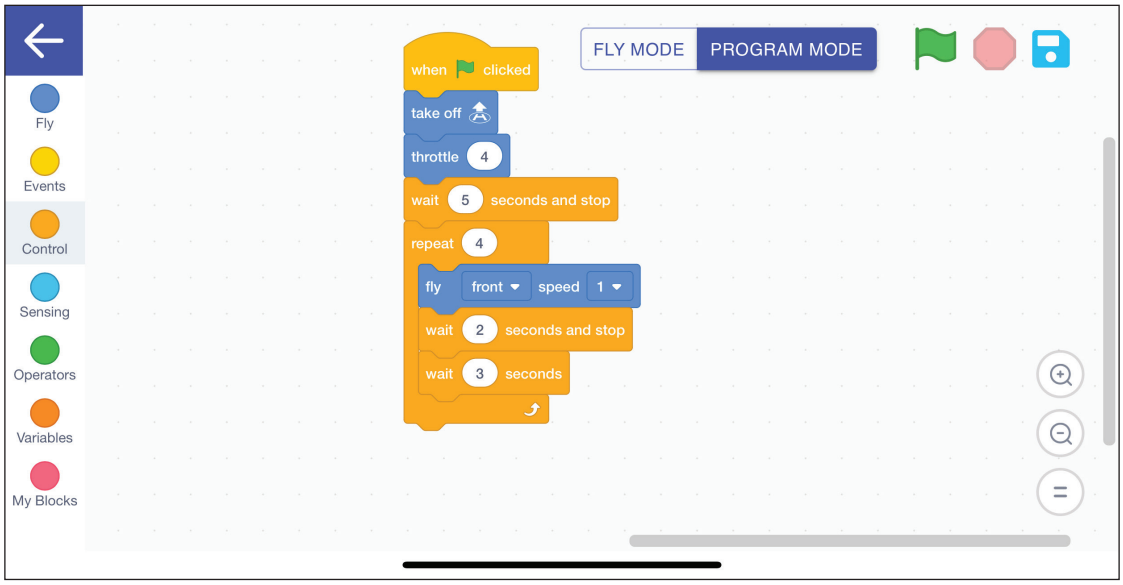


14. For a larger sequence of code, it can be helpful to use additional **wait blocks** as they will increase the precision of your drone's flight.

Use the **wait seconds block** for your sequence. Simply drag the **wait seconds block** into the sandbox and hover it over the **wait seconds and stop block**. This will create a gap that you can drop this block into.

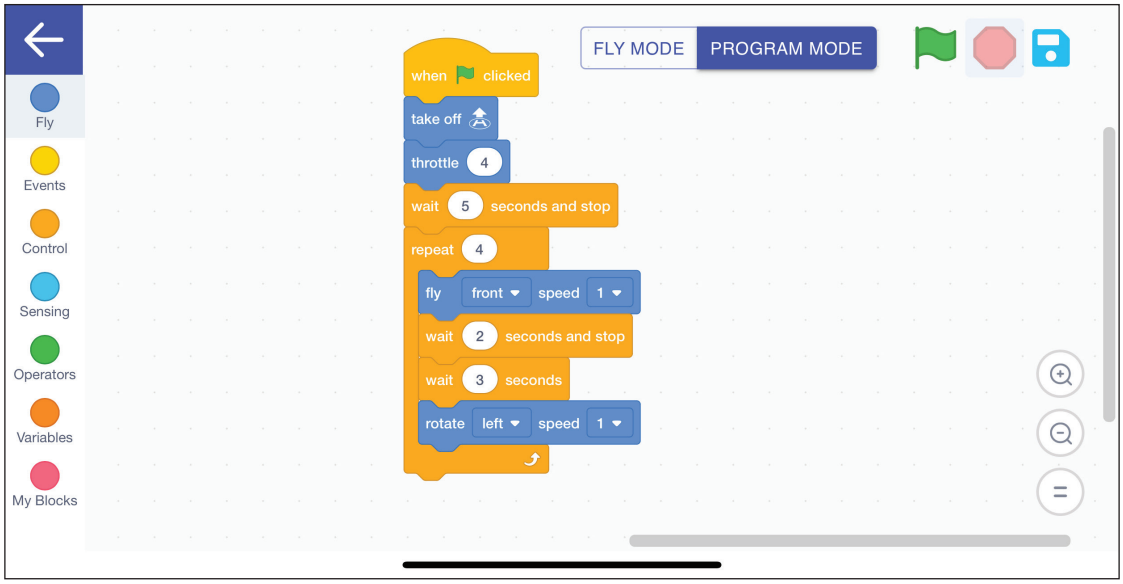
To change the number of seconds your drone will wait, click the block and use the nine-digit key panel. For your sequence, the drone should wait for three seconds.

Note: You can use decimals to help increase precision.



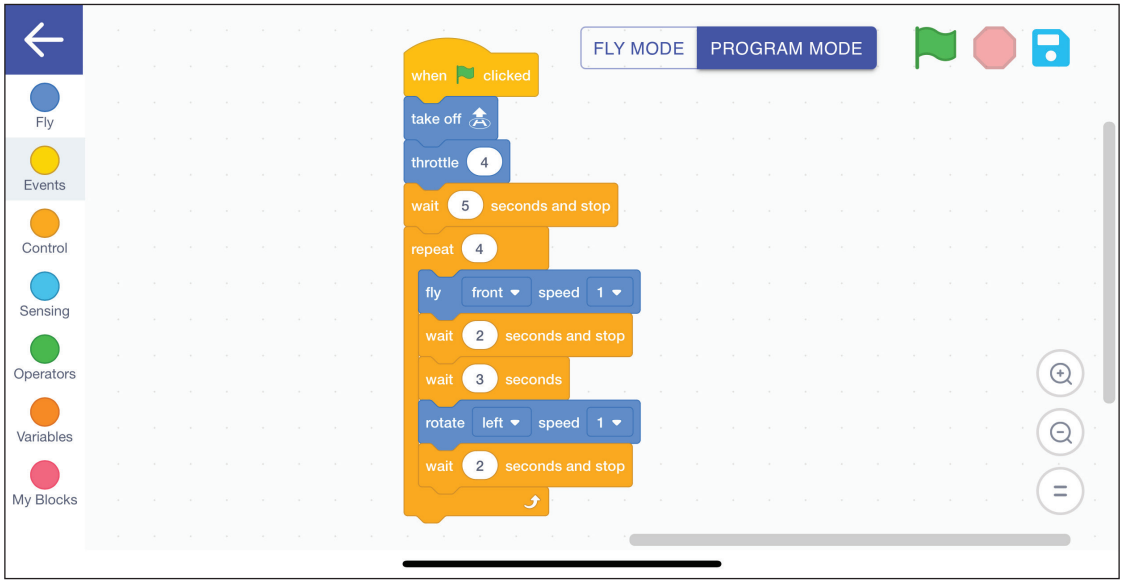
15. After flying forward, the drone will need to rotate. To do this, return to the Fly panel and select the **rotate speed block**.

For your sequence, leave the direction as left and the speed as one. Both can be changed by clicking the block and choosing a different option from the drop-down menu.



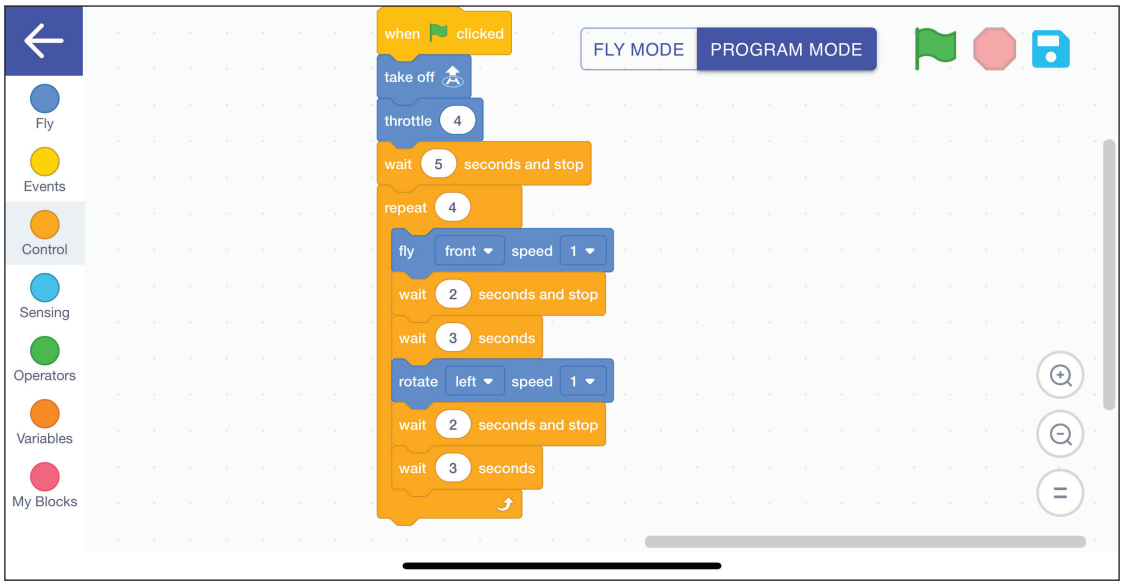
16. To help increase the precision of your drone, return to the Control panel. Select the **wait seconds and stop block**.

Click and drag this block into the sandbox and then click the block to bring up the nine-digit key panel. For your sequence, enter two seconds.

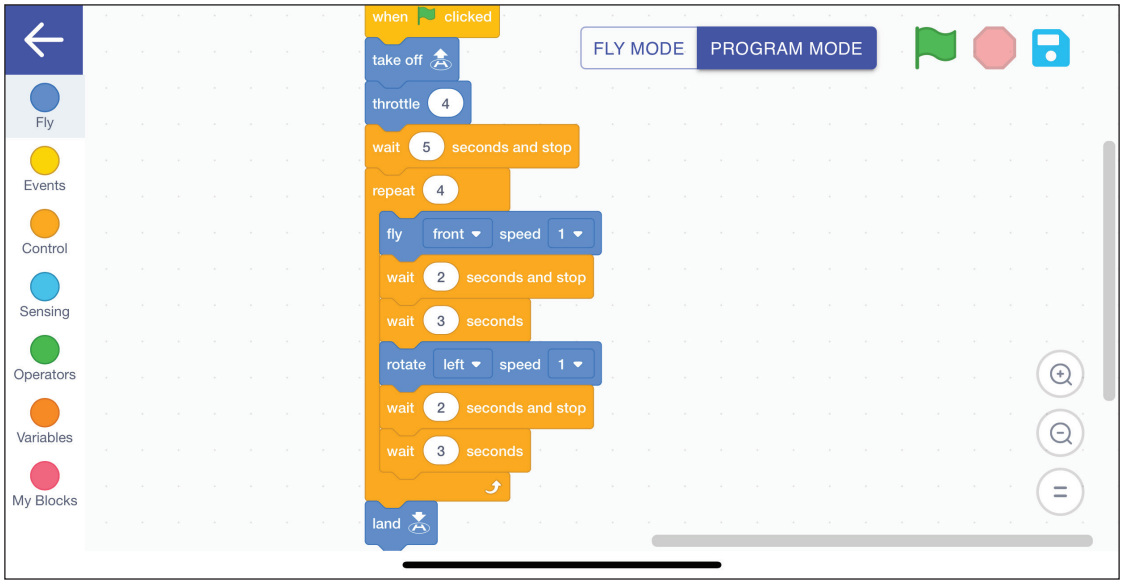


17. Because this is a larger sequence of code, use an additional **wait block** to help with the exactness of your flight path. In the Control panel, select the **wait seconds block**. For this sequence, select three seconds.

This will be the last block that rests inside of your **repeat block**.

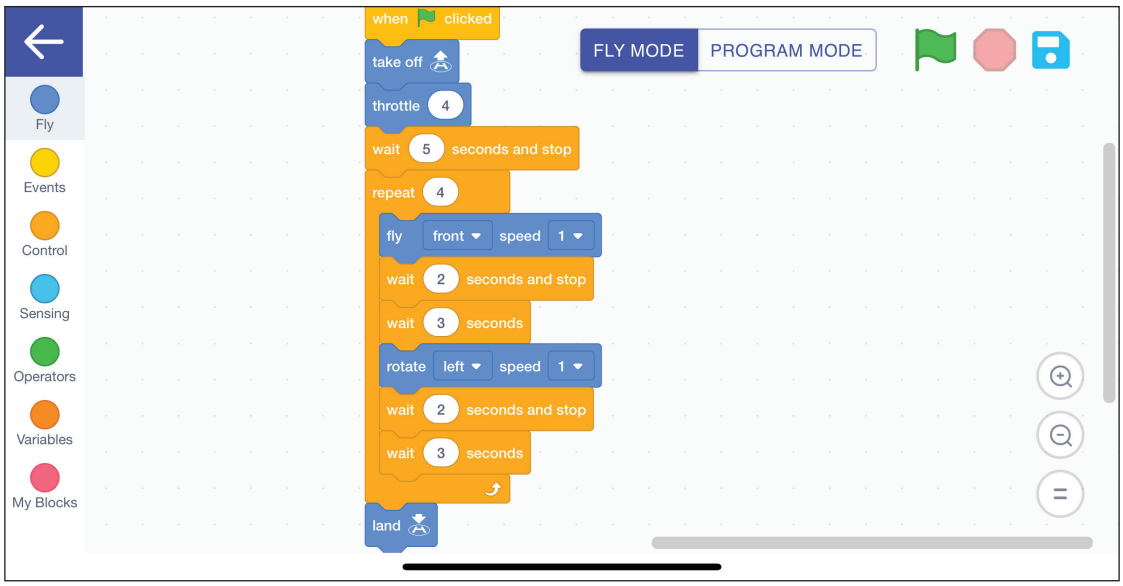


18. Navigate back to the Fly panel. To end your program, select the **land block**. Drag it into the sandbox and drop it below the end of the repeat portion of your sequence. Your code should look like the following. **Note:** Make sure to always include a **land block** at the end of your program for safety reasons. This ensures the drone comes to a stationary hover at the end of the program and slowly descends to the ground.

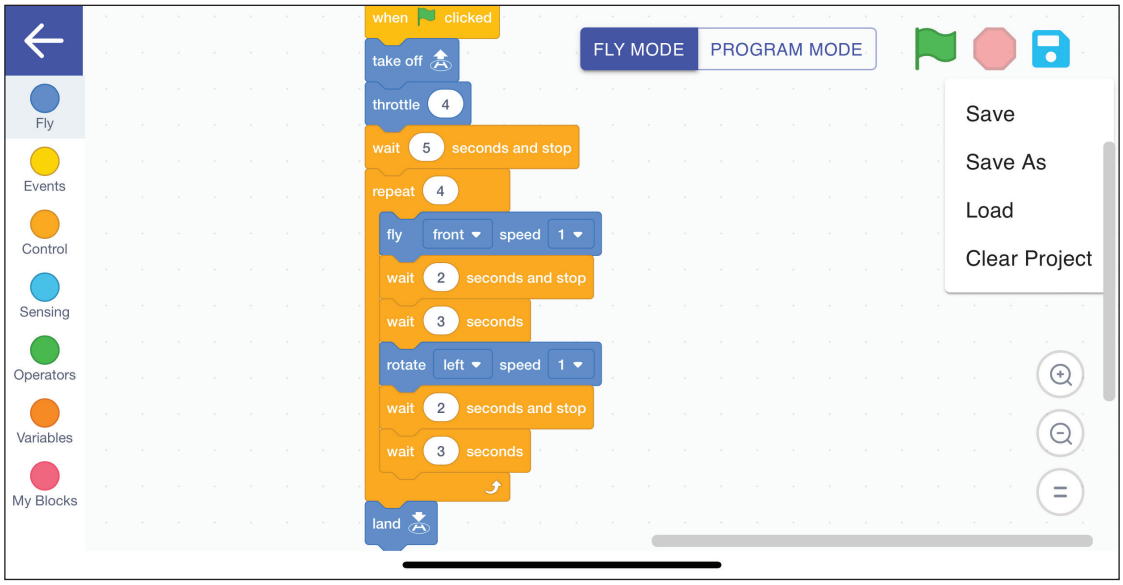


19. To test your code, leave Program Mode. In the upper right-hand side of your coding sandbox, click **Fly Mode**. A pop-up will appear, warning you that your drone can now take flight.

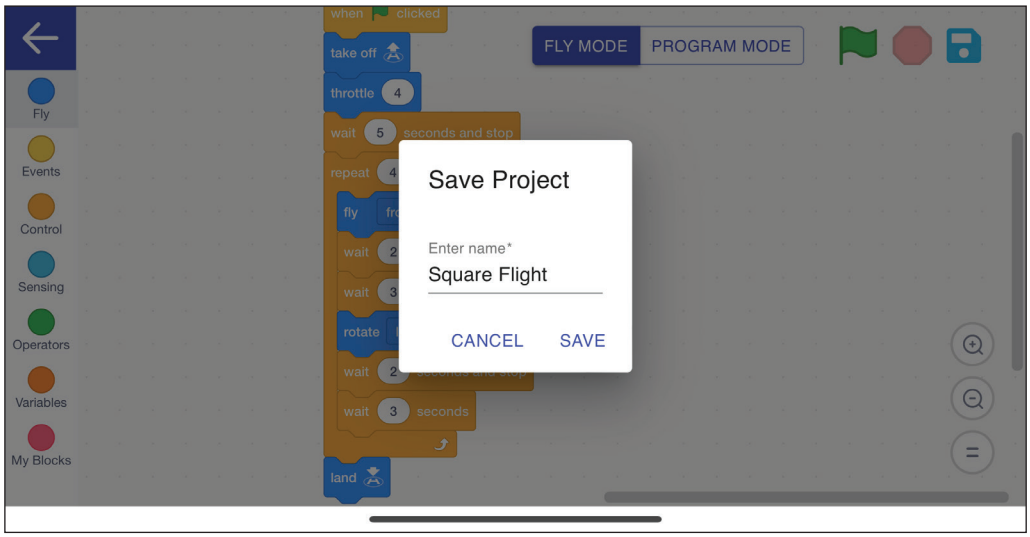
Click **Unlock** on the pop-up, and Fly Mode will now be highlighted purple. To execute your code, click the green flag icon in the top right-hand corner.



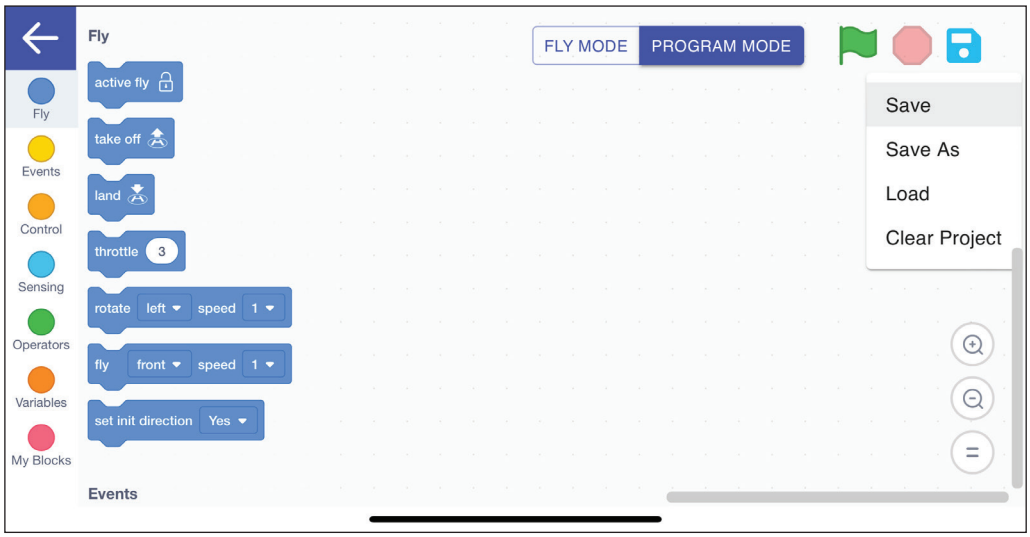
20. To save this sequence, click the Save icon also located in the top right-hand corner – this icon looks like a blue floppy disk. Then, click **Save As**.



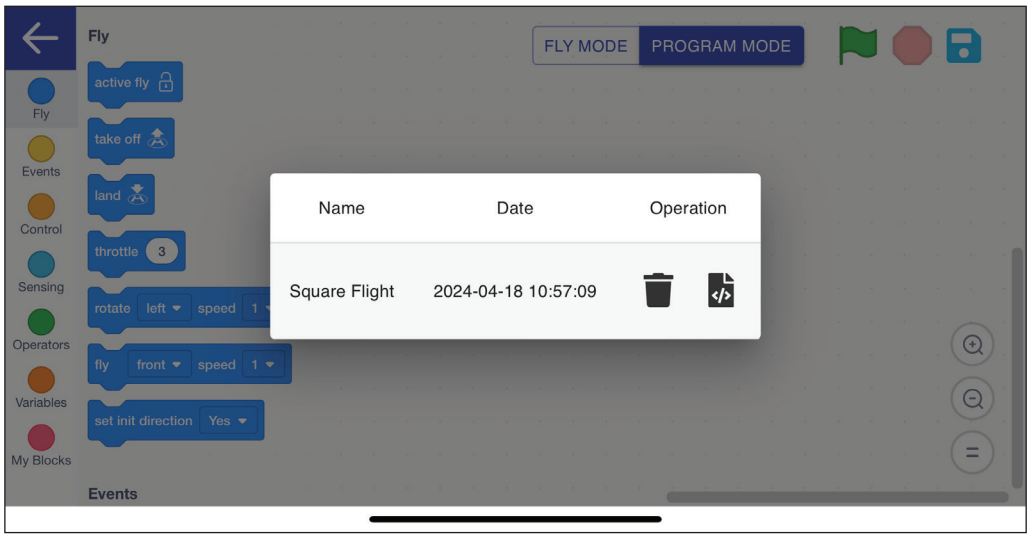
21. Name your program and then click **Save**.



22. To reopen this sequence later, click the Save icon and select **Load**.



23. A menu will populate, giving you the option to select which sequence you would like. Click the paper icon on the right side of the sequence you would like to open.



TIPS

If you need to close out of the coding app at any point, make sure to save your code first. If you did not connect your device to your drone before you began programming your code, make sure to save the code before exiting the app to pair with the drone.

Before testing your program:

- Make sure your drone has propeller guards in place.
- Ensure you have ample space for indoor flying to properly execute your program.
- Verify the front of the drone is pointing in the correct direction. The front of the drone is the end with the camera.
- Wear eye protection for your safety when operating a drone indoors.
- Please note the Echo Drone is meant for indoor operation only.

Each drone and piloting environment may vary slightly. A fully charged battery will lead to a more responsive drone than a low battery. Flying under an air vent or ceiling fan might cause additional drag on your drone. If your drone did not perform a perfect square, try slightly altering parts of your code to help offset environmental factors. Speed can be increased or decreased. Wait times can be altered to include decimal places to help with a more precise flight path. Continue to fine-tune your code until your drone operates just how you desire.

More information on Echo can be found in the user guide.

DOWNLOAD THE ECHO DRONE
USER GUIDE

NOTES

NOTES

HAVE QUESTIONS?

There are a variety of ways to get in touch with us:

Call us at 800-358-4983.

Email us at support@pitsco.com.

Chat with us on Pitsco.com/Support.

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