



# DRONEBLOCKS

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## PRE-LESSON: TEACHER ORIENTATION

### *Welcome!*

Congratulations on joining DroneBlocks. With your aircraft and the [DroneBlocks App](#), you have everything you need to create an exciting and educational program that your students will not forget.

We know you are eager to fly your new aircraft and to get started. Before you introduce this program to your students, however, it is important to review the following materials and to gain a basic level of proficiency with the aircraft.

While these aircraft are quite forgiving and simple to fly, without proper training you run the risk of not only damaging the drone, but also hurting people nearby. Review this guide and become proficient at flying before demonstrating with or around students.

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## Flight Basics & Training

### Step 1 - Pre-Flight Training: Familiarize yourself with the Aircraft

1. Read the quick start guide and instruction manual included with your DJI Phantom 3 to orient yourself to your aircraft.
2. You may supplement the above with the follow tutorials on Youtube:
  - a. [Phantom Tutorial Videos](#)

## Step 2 - Flight Training

For your first flight, you should get yourself comfortable with manually controlling the aircraft. While DroneBlocks will allow you to fly your aircraft autonomously, you should always be prepared to take control of the aircraft and fly it manually.

1. Find a suitable location
  - a. Be sure your location is not in restricted airspace - <https://app.airmap.io/>
  - b. Your location should be at least the size of a soccer field
    - i. Be sure the area is free of trees, powerlines or any other obstructions in the air
    - ii. Find a level, solid surface to launch your aircraft
    - iii. **Never fly your aircraft near or over people**
  
2. Review the **"DroneBlocks Pre-Flight Checklist"**
  - a. If something doesn't seem right, stop -- better to be safe than to potentially damage your brand new aircraft
  
3. **Flight One** - Taking off and Landing:
  - a. Review the pre-flight checklist
  - b. Perform an automatic take-off
  - c. Perform an automatic landing
  
4. **Flight Two** - Manual Takeoff and Landing ([DJI Takeoff and Landing Video](#))
  - a. Review the pre-flight checklist
  - b. Take off manually
    - i. Arm the motors
    - ii. Left stick upward until the aircraft is hovering at 10-15 feet
  - c. Land manually
    - i. Safety Note -- never land the aircraft near yourself or any other people.
  
5. **Flight Three** - Out and Back
  - a. Review the pre-flight checklist

- b. Take off manually to 25 feet
- c. Fly the aircraft straight forward a short distance by pushing forward on the right stick
  - i. Fly slowly -- do not push the stick all the way forward
  - ii. You will notice that when the aircraft is facing away from you, the red lights are on the far side of the aircraft (along with the stripes on the arms of the aircraft). Remember this: **red=bad**. If the red lights are facing you, then your controls will be inverted. It is always important when flying manually to keep the aircraft pointed away from you for this reason.
  - iii. Using the left stick, slowly return the aircraft to the starting point
- d. Land the aircraft

#### 6. **Flight 4** - Flying a Box Pattern

- a. Review the pre-flight checklist
- b. Take off manually to 25 feet
- c. Fly forward a short way by pushing forward on the right stick
- d. Then, while keeping the aircraft oriented forward, fly the aircraft in a square pattern to get a feel for controlling the aircraft in all directions.
- e. Land the aircraft

#### 7. **Flight 5** - Yaw

- a. Fly forward & spin the aircraft 180 degrees...notice how the controls are reversed
- b. Spin the aircraft 180 degrees until the aircraft is pointed back in the original direction
- c. Return the aircraft and land

Now that you have familiarized yourself with the basic controls of your aircraft, we recommend practicing regularly to increase your confidence and skill at controlling the aircraft. Whenever you are flying with DroneBlocks, you should be prepared to assume control of the aircraft in the event that the aircraft is not behaving as you would expect.

**Only after you are comfortable piloting the aircraft should you begin using DroneBlocks to autonomously control your drone.**

**Educator Note:** You will notice many references to posting and sharing online. Demonstrate positive digital citizenship for your students and respect all laws and regulations. A permission slip is included in this curriculum if you choose to gain parental permission to post student photographs and projects.

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