

# DRONE GUIDE

The following is a suggested list of drones for the Droneworks competitions. The marketplace for drones is constantly changing, so other permissible drones may be available. Please see the Droneworks competitive event guides for detailed drone specifications.

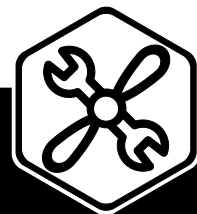
	Ryze <b>Tello/Tello EDU</b>	RoboLink <b>CoDrone EDU</b>	Makerfire <b>LiteBee Wing</b>	Parrot <b>Mambo FPV</b>	Robomaster <b>Tello Talent</b>
<b>website</b>	www.ryzerobotics.com/tello	www.robotlink.com/products/codrone-edu	www.litebee.com/product/liteBeeWing/	Discontinued	www.dji.com/robomaster-tt
<b>price</b>	\$99.00/\$149.00	\$214.99	\$199.00	\$149.99	\$239.00
<b>store</b>	Amazon, Pitsco, DJI	Robolink, VEX	RobotShop, Stemfinity		GameStop, DJI, www.droneblocks.io
	+ Controller \$55 - \$60		Lego block frame		Includes ESP32 microcontroller & LED panel
	Boost Combo - \$149.00				

## Autonomous Flight Coding

	Tello EDU DroneBlocks	ByBlocks	LiteBeeGo	Tynker	Tello EDU DroneBlocks
<b>Android</b>	Tello EDU DroneBlocks		LiteBeeGo	Tynker	Tello EDU DroneBlocks
<b>iOS</b>	Tello EDU DroneBlocks Swift Playgrounds		LiteBeeGo	Tynker Swift Playgrounds	Tello EDU DroneBlocks Swift Playgrounds
<b>PC</b>	MIT Scratch 3.0 Offline Mind+	Blockly (browser-based) ByScratch	LiteBeeGo (PC)	Blockly (browser-based)	MIT Scratch 3.0 Offline Mind+
<b>Mac</b>	MIT Scratch 3.0 Offline Mind+	Blockly (browser-based)	LiteBeeGo (Mac)	Blockly (browser-based)	MIT Scratch 3.0 Offline Mind+
<b>Chromebook</b>	Droneblocks (Chrome app)	Blockly (browser-based)		Blockly (browser-based)	Droneblocks (Chrome app)
<b>Text-Based</b>	Python, Javascript	Python	Python, Javascript	Python, Javascript	Python, Javascript

## Manual Flight

	Tello (free) TelloFPV (\$5.49)	Petrone (free)	LiteBee	FreeFlight Mini (free)	Tello (free) TelloFPV (\$5.49)
<b>Android</b>	Tello (free) TelloFPV (\$5.49)	Petrone (free)	LiteBee	FreeFlight Mini (free)	Tello (free) TelloFPV (\$5.49)
<b>iOS</b>	Tello (free) Tello EDU (free)	Petrone (free)	LiteBee	FreeFlight Mini (free)	Tello (free) Tello EDU (free)
<b>Controller</b>	GameSir T1d (Android) Steelseries Nimbus, GameSir T1	Included	Included	Included	GameSir T1d (Android) Steelseries Nimbus, GameSir T1



# GET STARTED

## Is this a national event?

- No, Droneworks is an Oklahoma ONLY event. National TSA will debut a new event called Drone Challenge (UAV) available for HS students.

## Who can participate?

- Middle School & High School
- Team of 1-2 participants

## Can we have more than one team?

- 2 Teams per Chapter

## What do we have to do?

- **Research** a real-world topic and document the use of drones
- **Create** a research poster (MS) or a research portfolio (HS)
- **Code** a drone to fly pre-programmed flight paths to score the most points in an **autonomous** flight challenge.

## Is coding a drone hard?

- You can choose how to code your drone based on your skill level. Beginner teams can use a blocks-style programming app on a smartphone/tablet or Scratch or Blockly on a computer. Advanced teams can use text-based programming such as Python or JavaScript to code their drone.

## What type of drone do we need to buy?

- One that can be programmed for autonomous flight. *See the back side of this guide for more information.*

## What do we need to compete?

- A programmable drone
- A smartphone/tablet

## Do we have to have a smartphone/tablet?

- Yes, **manual** flight with these programmable drones is only possible with a smartphone/tablet app.
- **Autonomous** flight code may be run from a smartphone/tablet or a computer.

## What else should we buy?

- Gamepad Controller (Optional - *See the back side of this guide for app compatibility.*)
- Extra Batteries
- Battery Charging Hub
- Propeller Cage