



# edventures!™



EXPERTS IN  
HANDS-ON  
STEM EDUCATION



**The Best Drone for  
STEM Education  
WEBINAR**

[sales@edventures.com](mailto:sales@edventures.com)

[edventures.com](http://edventures.com)

(800) 429-3110

# Your Hosts



**Tyler Downey**

*STEM Specialist*

*Training Coordinator*

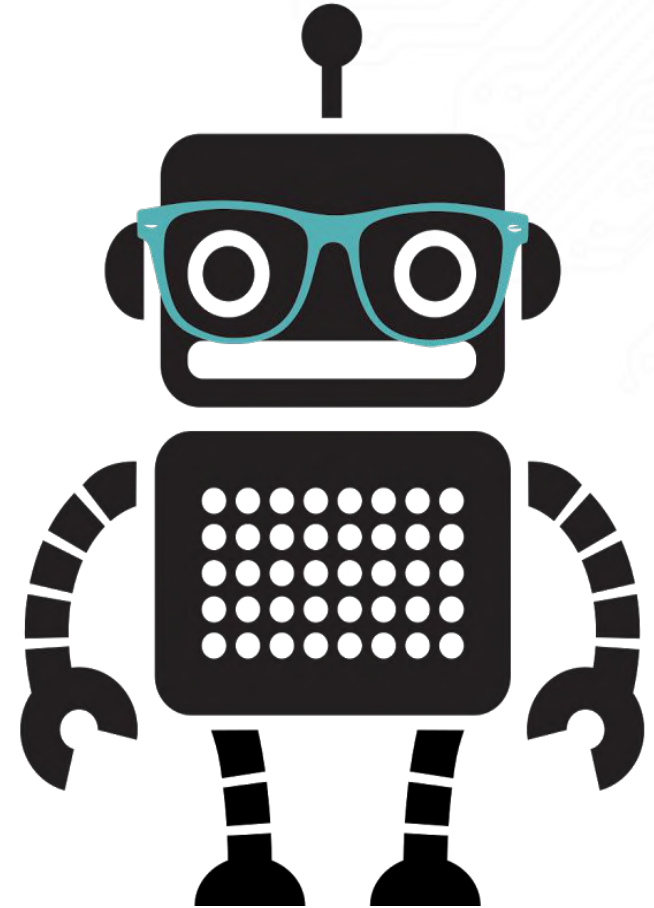


**Michelle Fisher**

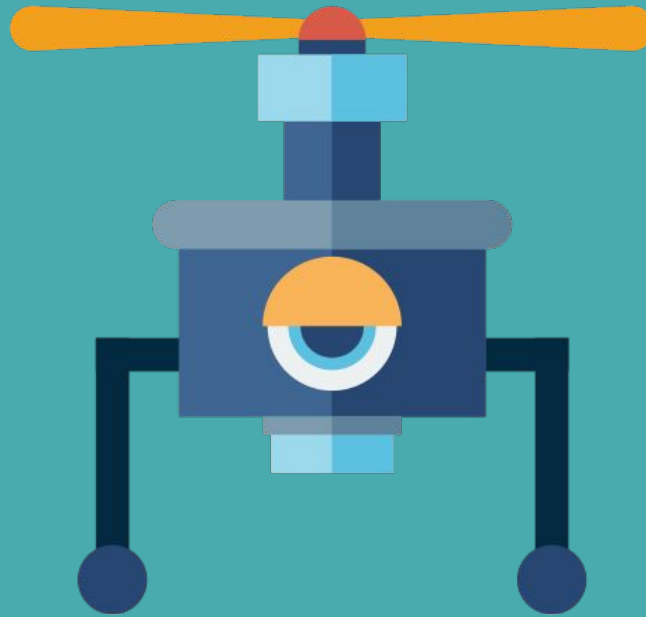
*Director of STEM Development*

# Agenda

- Why Drones and STEM?
- Latest and Greatest Programmable Drone Options for Grades 4-12
- *DroneBlocks: Coding with Drones*
- *Ready, Set, Drone! Second Edition*
- Advanced Coding Bundle
- *Discover Drones - STEM* exploration at it's finest
- Q&A



# Why Drones and STEM?



**The opportunity for  
experienced, credentialed  
UAS professionals is  
enormous**



# Agriculture



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# Delivery



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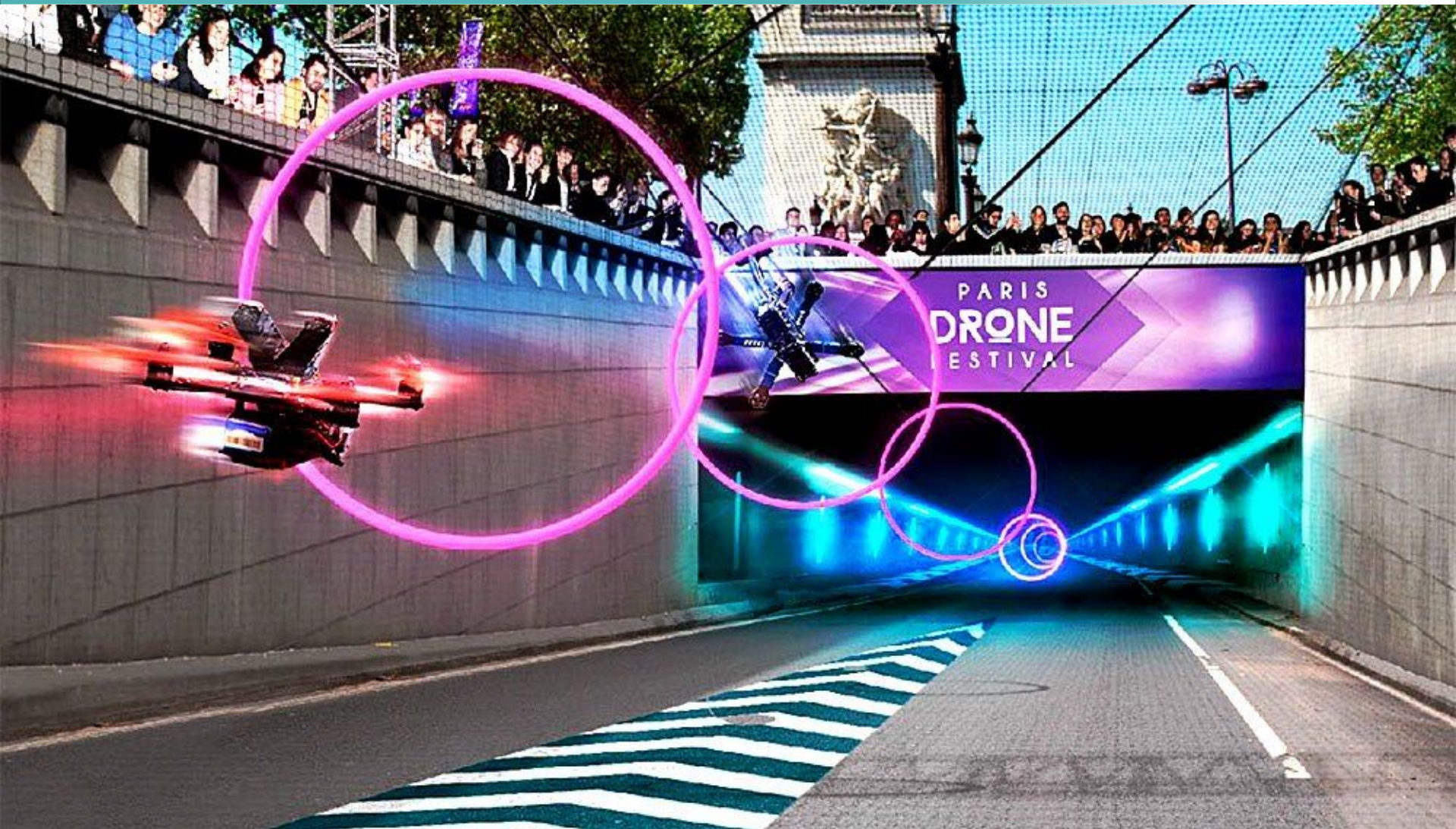
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# Scientific Applications



# Competitive Sport





## The number of full-time UAS related jobs as of May, 2019

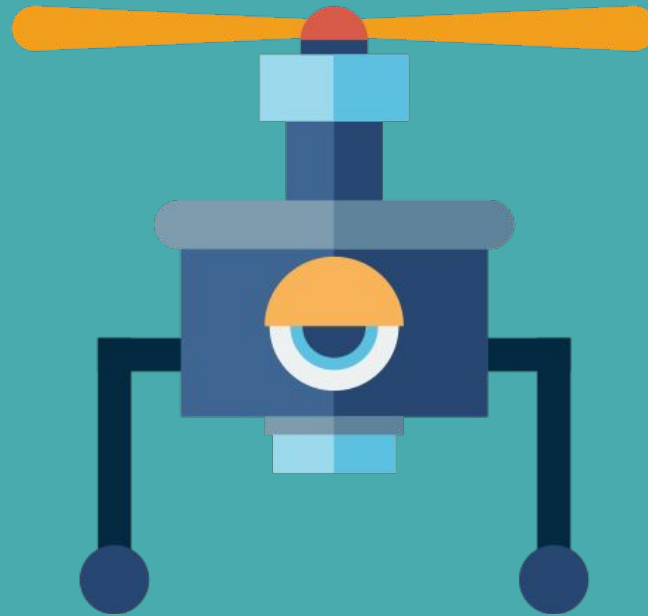
**2,193** listed on  
**Indeed**

**1008** listed on  
**Monster**

and **2,337** listed on  
**Glassdoor**

- *The average starting salary for drone pilots is **\$75,200** per year.*
- *For engineers and developers working on the control systems, average starting salaries are often well above **\$100,000**.*

# Newest Offerings



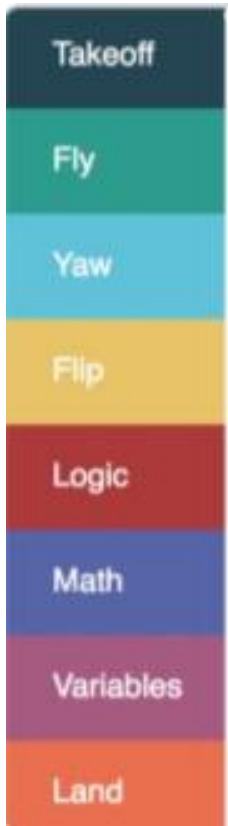
## 12 One Hour Lessons

### Typical lesson flow:

- Intro Discussion
- Coding Lessons and Challenges
- Whole Group Wrap Up



# What is DroneBlocks?



**DroneBlocks** is a drag-and-drop coding language that is easily accessible to younger & new-to-programming students. Our curriculum pairs DroneBlocks with the **DJI Tello**, a versatile mini-drone with many sophisticated functions.

# Coming soon- *Discover Drones:* *Advanced Coding Bundle*



**DRONEBLOCKS**



**DRONEBLOCKS**





# Coming soon- *Discover Drones:* *Advanced Coding Bundle*



## Kit Includes:

- Premium LMS access to Intro to DroneBlocks, Advanced DroneBlocks, and Python for Tello
- Brief Instructor Guide
- 5 Tellos & extras

DroneBlocks is *free* and available for iOS, Android and ChromeOS devices (OK with desktops, laptops, tablets, ChromeBooks - phone or tablet still required for drone controller)

***Coding in Python requires a Mac or Windows PC.***





DRONEBLOCKS



DRONEBLOCKS



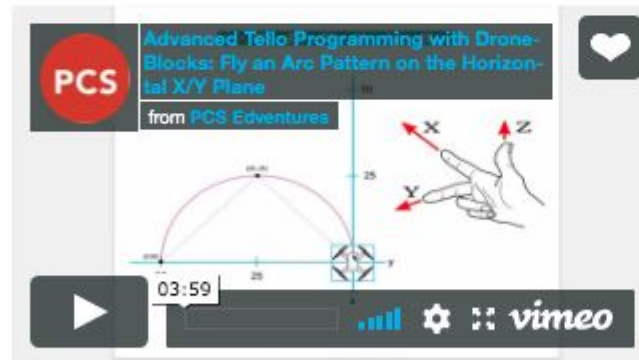
python™



You've got slopes under control, now it's time to revisit the Right-Hand Rule as you program your drone to fly in an arc. In DroneBlocks, the curve block requires two points to create a triangle shape in the x/y/z coordinate system — the first point is the Tello's current position while the other two points complete a triangle. Using these inputs, the Tello calculates the best path through these points to fly in a curve pattern. Test your Tello's calculation skills with your new mission:

**Fly a curve pattern on the X, Y and Z plane.**

To learn how it's done, click play on the video below:



Course Progress

Course Navigation

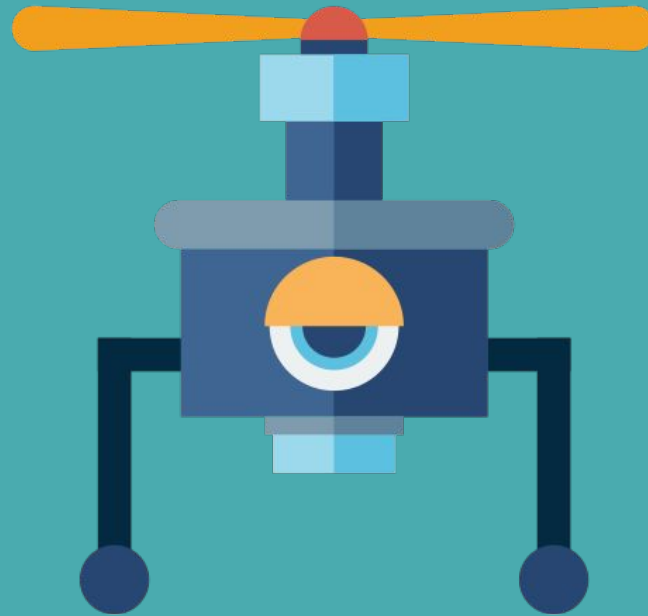
- ➔ Elevate Squares with Nested Loops
- ➔ The Polygon Equation with Variables
- ➔ 3D Coordinates & the Right Hand Rule
- ➔ Fly Points on a Line Using Slope
- ➔ Flying an Arc Pattern on the Horizontal X/Y Plane
- ➔ Fly a Loop Pattern on the Vertical Plane
- ➔ Fly Using the Sine Wave Equation
- ➔ Orbit Around a Center Point

[Return to Advanced Tello Programming with DroneBlocks](#)

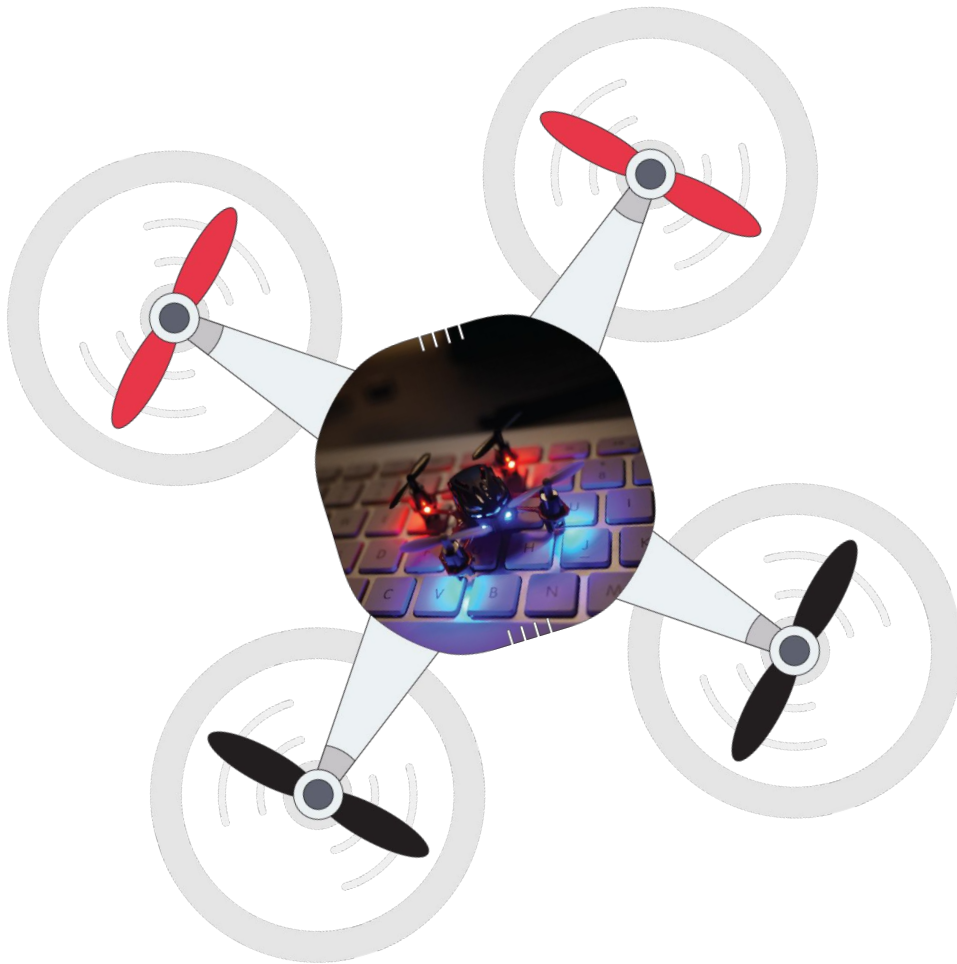
Achievements [View Details >](#)



# Updated for 2019



# The Mini Drone Revolution



- Weather and space
- Regulatory hurdle
- Ease of learning
- Platform for STEM

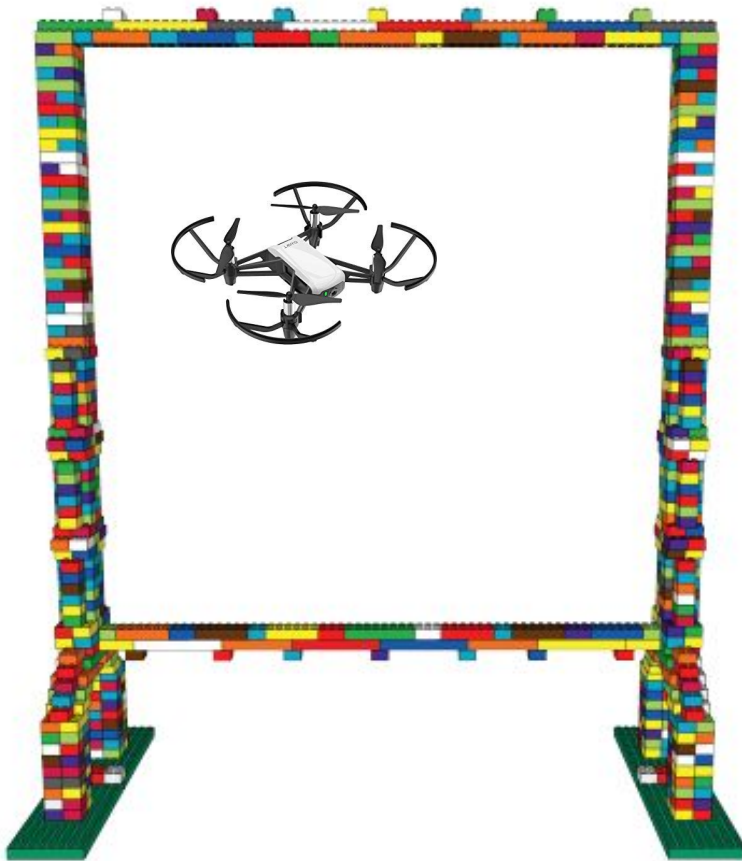
# Ready, Set, Drone! 2nd Edition



## Updated for 2019

- Brand new *Droneology Jr* Video course
- 6 Tello Mini Drones
- Designed to balance collaborative teamwork and independent study skills
- Integrates Language Arts skills through the use of Science Journals





## *12 One Hour Lessons*

### DRONE ESSENTIALS:

- What drones do and how they work

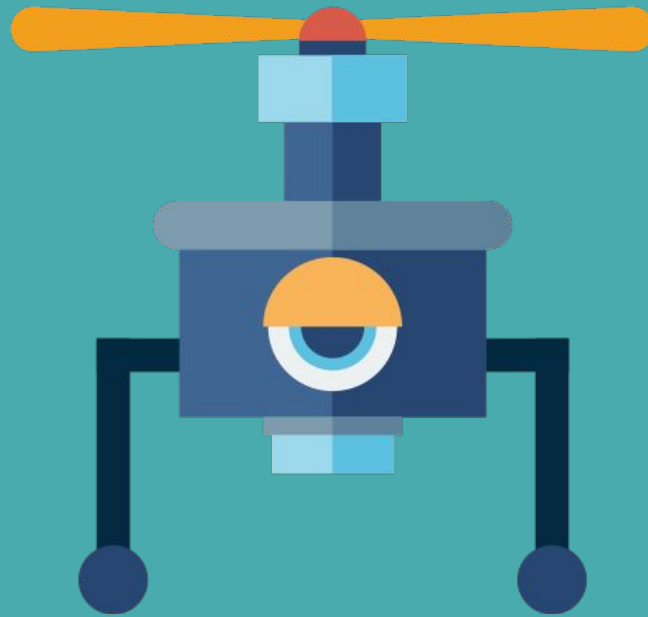
### DRONE PHYSICS:

- How Drones Fly

### DRONES IN THE REAL WORLD:

- How to fly legally, ethically and positively

# Best Educational Drone for Grades 7-12



## Discover Drones includes 6 distinct student experiences

1. Droneology: a series of educational videos and quizzes
2. Hands-on construction and configuration of the RubiQ drone
3. Academic exploration of core STEM concepts related to drone operations.
4. Flight simulator training
5. Real-time flight training and practice
6. Open-ended projects that integrate technological literacy with real-world student-driven learning.





## Everything needed to build RubiQ, the modular, easy-to-fly, educational drone

### *Includes:*

- **Assembly components**
- **Spare parts and extra props**
- **Printed Build Plans**
- **Tools for assembly**



# Drone's Anatomy

1. **Frame**
2. **PCB (Printed Circuit Board), GPS and RX (Radio Receiver)**
3. **FPV (First Person View) Camera & VTX (Video Transmitter) System**
4. **Motors & ESC's (Electronic Speed Controls)**
5. **LiPo (Lithium Polymer) Battery**



*RubiQ: The Premier Educational Drone*

## Also included:

- **Radio Controllers**
  - Can be tethered
  - Comes with adapter cable to use EV PEAK charger
- **FPV Goggles**
  - connects to drone via VTX signal
  - Charges via USB cables



# Discover Drones

## Also included:

- **Game Controllers** for flight simulator
- **LiPo batteries** for RubiQ
- **LiPo battery balance charger** and power supply
- **LiPo-safe bags**



# Curriculum Road Map

## Level 1: BUILD

*Drone subsystems and engineering principles*

## Level 2: TUNE

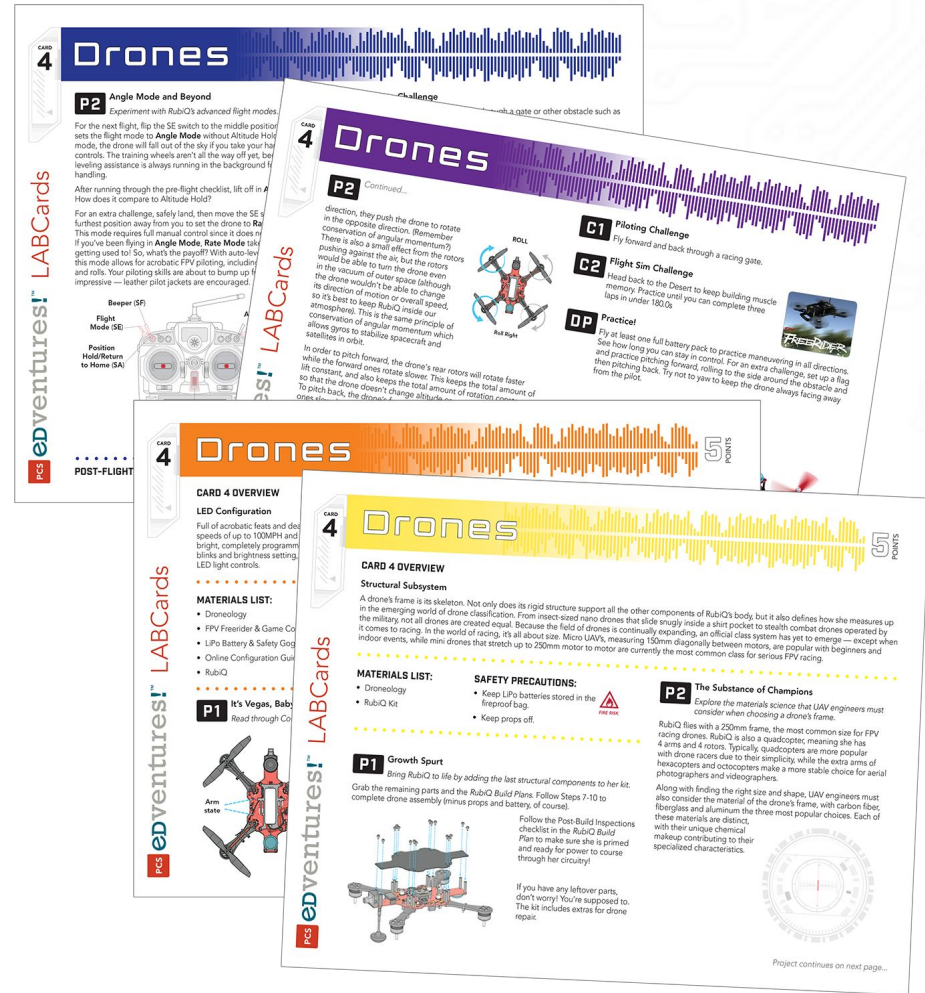
*UAV programming and configuration*

## Level 3: FLY

*Best practices in aviation*

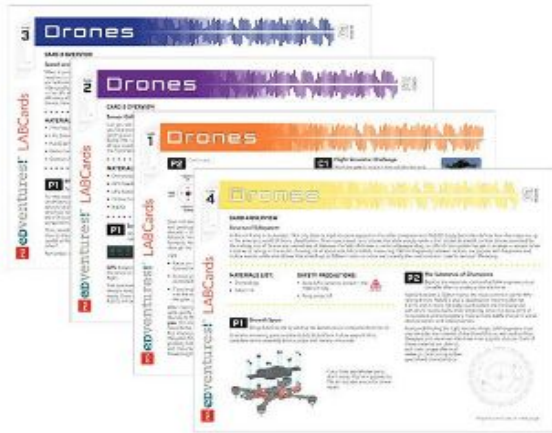
## Level 4: FPV

*The physics of flight and aerodynamics*



# Recommended Pairings

## Junior/Senior High Gr. 7-12



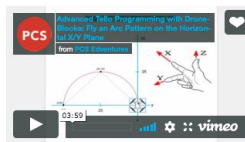
DRONEBLOCKS



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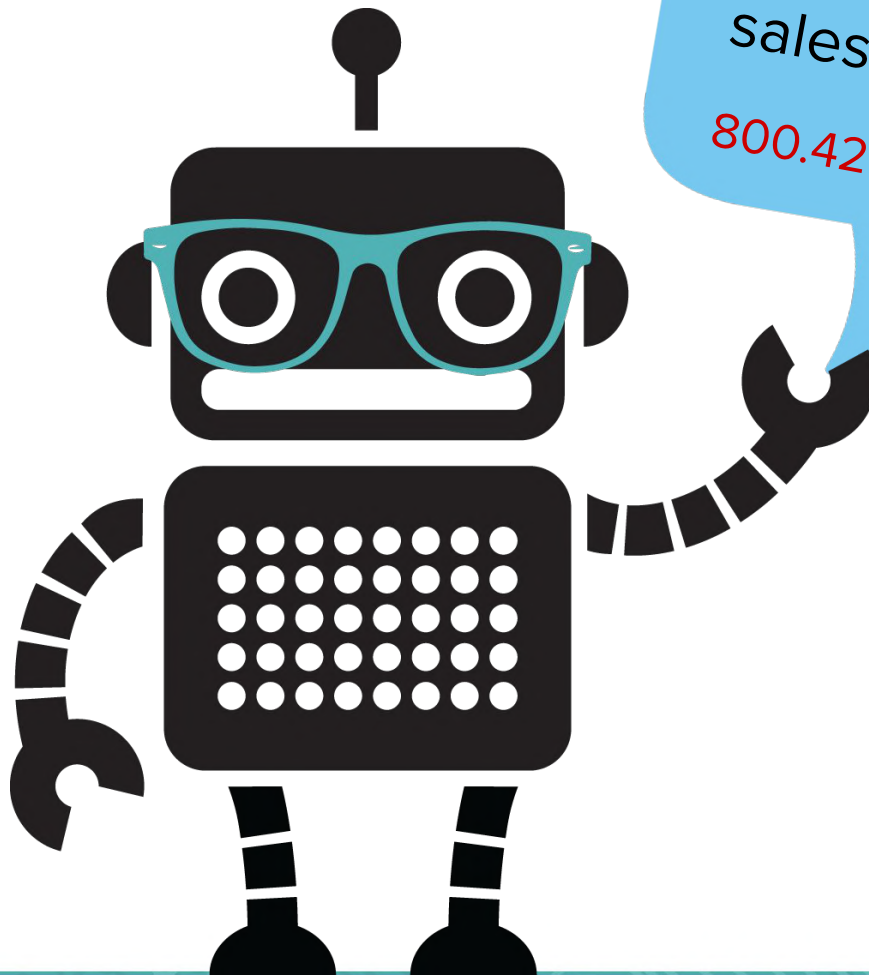


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- Return to Advanced Tello Programming with DroneBlocks
- Achievements View Details

## Upper Elem./ Middle Gr.4-8



# Contact Us

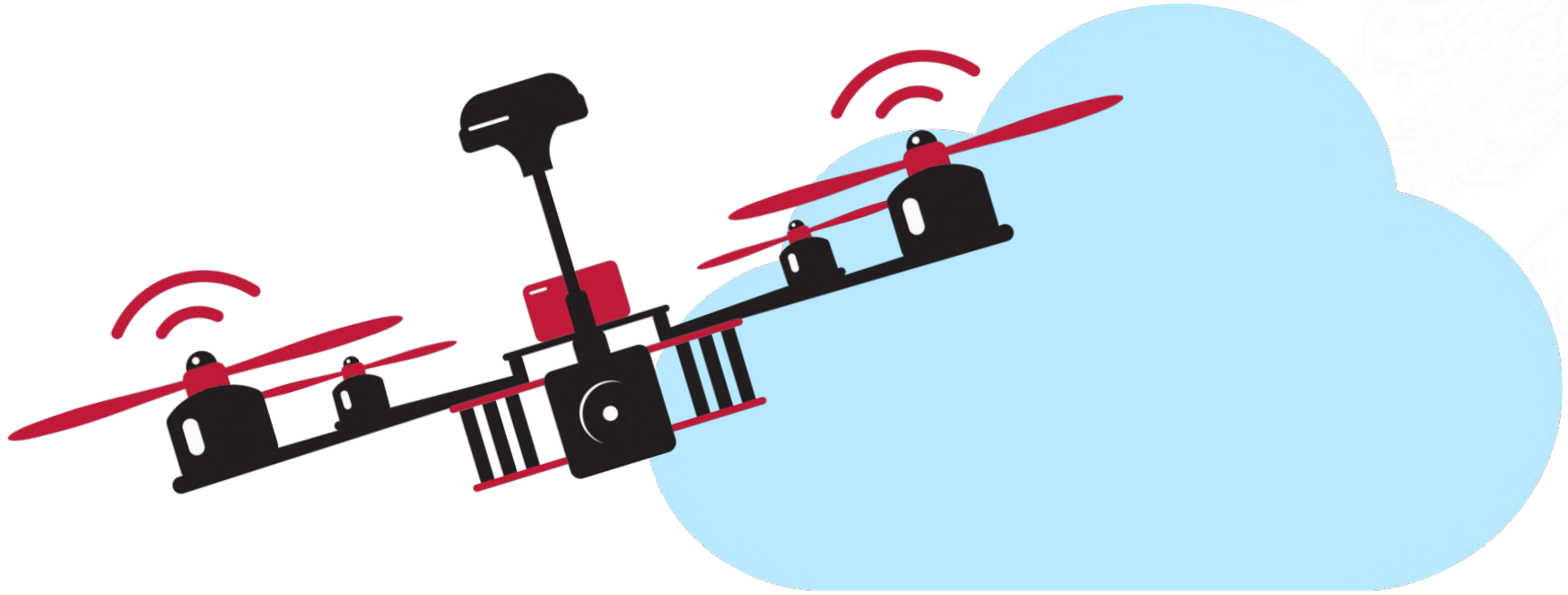


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# Questions?









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