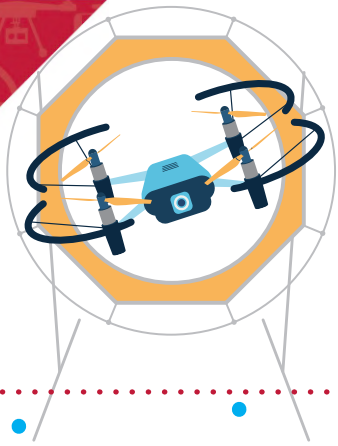


READY, SET, CODE! PROGRAMMING WITH DRONES

Grades: 4-8

→ DRONES



Students: Up to 30, working in 6 groups

Contact Hours: 12+ hours

This program includes 12 days of activities, each designed to last about one hour. Use one lesson a day, clump them together into larger blocks or break them apart to be worked in one at a time throughout the course of a school year.

Recommended Settings:

- Summer camps
- Classrooms looking for hands-on STEAM activities
- After-school programs

Pricing Options:

- Complete Program: \$2,995⁰⁰
- Curriculum Printed Copy: \$495⁰⁰ *
- Curriculum Digital Download: \$429⁰⁰ **
- Add-On to *Ready, Set, Drone!* or *Drone Designers*: \$895⁰⁰

Technical Requirements:

- 6 compatible devices (one per drone) running the DroneBlocks app and 1 compatible device running the Tello app.
- The DroneBlocks app requires the use of a Wifi-enabled smartphone, tablet, Chromebook, desktop or laptop running Android, iOS or ChromeOS. (Note: DroneBlocks is not compatible with FireOS, the operating system for Amazon tablets.)
- The Tello app required for firmware updates requires the use of a Wifi-enabled smartphone or tablet running Android or iOS. (Note: the Tello app is not compatible with FireOS).

Curriculum Topics:

- Aerial Robotics
- Autonomous Drone Operations
- Algorithms & Programming
- Refactoring & Optimizing Code
- Loops, Variables & Conditionals

Assessment:

Formative or summative assessments in the Check for Understanding section found at the end of each lesson.

Materials:

Ready, Set, Code! Programming with Drones comes with an Instructor Guide, a digital curriculum download and all the supplies needed for 12 days of activities:

- Brick minifigs: 6
- DJI Tello programmable mini quadcopters: 6
- Indoor obstacle course: 6 free-standing keyhole gates
- *Introduction to DroneBlocks* online course student licenses: 50
- LiPo safe storage bag: 1
- Playing cards: 6 decks
- Safety glasses: 30
- Stopwatches: 6
- Storage tubs: 1
- Tape measures: 6
- Tello brick adapters: 6
- Tello hard shell carry cases: 6
- Tello LiPo batteries: 12
- Tello 4-Port LiPo battery multi-charger: 3
- Tello prop guards (extra set of 4): 6
- Tello propellers (extra set of 4): 6
- USB charging cables: 6

Logistics and Storage:

Each program is shipped in a sturdy, reusable tub, safely storing materials throughout the year.

Training Available:

Professional development webinar training is available. Speak with a PCS STEAM Program Specialist for more information.

Shipping Availability:

Check with a PCS STEAM Program Specialist.

* includes *Instructor Guide*, 50 student licenses to *Introduction to DroneBlocks* online course

** includes PDF of *Instructor Guide* and 50 student licenses to *Introduction to DroneBlocks* online course

Alignments & Standards

Habits of Mind:

16 “thinking habits” developed by Art Costa and Bena Kallick to empower students to succeed in a 21st century learning environment.

- Thinking and Communicating with Clarity and Precision
- Thinking Interdependently

21st Century Skills:

A set of widely-applicable abilities essential for success in the information age.

- Information, Media, and Technology Literacy
- Communication and Collaboration

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CCSS

Aligned to International Technology and Engineering Educators Association (ITEEA) standards for technological literacy.

- CCSS.MATH.CONTENT.4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.
- CCSS.MATH.CONTENT.4.MD.C.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
- CCSS.MATH.CONTENT.6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.
- CCSS.MATH.CONTENT.6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

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ISTE

Aligned to International Technology and Engineering Educators Association (ITEEA) standards for technological literacy.

- 17c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

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ICSS

Idaho Computer Science Standards, built on the interim 2016 CSTA (Computer Science Teachers Association) standards

- 3-5.AP.07. Construct an algorithm to accomplish a task, both independently and collaboratively.
- 3-5.CS.01. Create code to model intelligent behavior in computing devices (e.g. CS unplugged activities, robot programming).
- 3-5.IC.02. Explore the connections between computer science and other fields.
- 6-8.AP.02. Compare different algorithms that may be used to solve the same problem by time and space efficiency.
- 6-8.AP.04. Apply an iterative design process (define the problem, generate ideas, build, test, and improve solutions) in problem-solving, both individually and collaboratively.
- 6-8.CS.01. Exemplify how computational devices impact the quality of life (both positively and negatively) and enhance the ability of people to perform work, communicate, and interact with others.

