Introduction

Welcome

- Introduce yourself in the chat box
- Share your name and where you are from

Website

Resource Library

Email: drones@recf.org
Starting an Aerial Drone Competition Team

Louann Cormier | Senior Program Manager
Aerial Drone Competition Program
Robotics Education & Competition Foundation
About the REC Foundation

RECF.ORG
Our Vision

Meeting the challenges of today for our future students

We see a future where every student designs and innovates as part of a team, overcomes failure, perseveres, and emerges confident in their ability to meet global challenges.
The Aerial Drone Competition Program began in 2019, with just a handful of teams. In the 2023-2024 season we have over 1500 teams nationwide.

1.1 million students in 70 countries

Have participated in the REC Foundation’s VEX family of robotics programs from elementary through college.

Our VEX robotics programs have reached more than 100,000 students at more than 2,000 schools around the globe.
By partnering with universities and colleges to offer a scholarship program, the REC Foundation hopes to encourage students in our programs to continue their education and pursue careers in STEM.

Contact scholarships@roboticseducation.org for more information or to sponsor a scholarship.
Online Challenges

Learning beyond the competition field

Aerial Drone Competition teams have the opportunity to participate in Online Challenges including our Career Readiness for Drones Challenge to win prizes.

- Multiple sponsored categories
- Diverse challenges
- Open to all levels from Elementary to University
Why Drones?

RECF.ORG
Benefits of Drones

Sparking student curiosity in drones

• Drones are quickly finding their way into our everyday lives.

• Drones in the hands of the students spark curiosity in aviation, engineering, coding and much more.

• Drones are attracting students from all backgrounds, who have not previously shown interest in STEM.

• Drones are an effective tool to encourage students to learn skills that are not easily taught in traditional classroom settings.

Awareness of future career opportunities

Teaches critical thinking, communication, and collaboration along with problem solving, and perseverance
Emergency drone market to top $16 Billion by 2033*

The median salary for a drone pilot is $82K *

Projected 51.1% growth in drone sales by 2027*

100,000 jobs will be created for drone pilots by 2025*

Currently there are 1,000+ open drone pilot jobs on Indeed*

---

*PR Newswire

*DroneU
https://www.thedroneu.com/blog/drone-pilot-salary-how-to-make-money-with-a-drone/

*Research and Markets
https://www.researchandmarkets.com/research/8nr62/global_drone

*The Association for Unmanned Vehicle Systems International

*Indeed.com
https://www.indeed.com/q-drone-jobs.html?vjk=fc7a54d0da9152fb
Benefits of Drones

Relating drones in real world applications

- Drones are a tool being used by professionals in the industry.
- Students who have exposure to Drones are more likely to explore the plethora of careers that use them.
- Drones education helps to bridge the gap between STEM and Non-STEM Careers.
The Competition

RECF.ORG
Future Innovators on the Rise

Raising the bar through competition

4 Missions - 1 Competition Students compete in local and national events. Competitions are recommended for students in grades 5-12.

1. Piloting Teamwork Mission
Drones are piloted by students. Two teams fly together on the same competition field to maximize their score in a 90 second match.

2. Autonomous Flight Skills Mission
Drone is programmed by students to operate entirely autonomously. Each team competes alone to score as many points as possible in a 60 second match.

3. Piloting Skills Mission
Drone is piloted by students to fly through an obstacle course. Each team competes alone to score as many points as possible in a 60 second match.

4. Communications Mission
Teams interview with Judges about their Drone, Programming and Competition Logbook Documentation.
Drone Awards

Judged Awards

Excellence Award - awarded to the Top Overall Team.

Flight Operations Award - awarded to a team that demonstrates an organized and systematic approach to planning and strategizing, project and time management, and team organization.

Think Award - awarded to a team that recognizes the most effective and consistent use of coding techniques and programming design process to solve the game challenge.

Inspire Award - awarded to a team that demonstrates passion and positivity for the Aerial Drone Program.

Judges Award - awarded to a team that distinguishes themselves in some way.

Performance Awards

Teamwork Champions - awarded to the top two teams at the end of the Elimination Rounds

Skills Champion - awarded to the team with the top combined Autonomous Flight and Piloting Skills score

Performance and Judged

Performance Awards
Drone Schedule

Competitions, tournaments and championships

Teams attend local events and earn invitations to represent their state at a Regional Championship Event based on season performance and awards.

Learn more about the Qualifying Criteria

Season Timeline

- April 2024 - Mission 2025 Season Opens for Team Registration
- September 10, 2024 - Mission 2025 Competition Rules Released
- October 2024 - March 2025 - Local Qualifying Events
- December 13, 2024 - Deadline for Team Registration
- April 2025 - June 2025 - Regional Championships
Your Drone Team

RECF.ORG
Coaches role

What does a drones coach do?

- Register teams
- Manage Teams
- Place Orders
- Organize meeting space
- Schedule Work Sessions
- Register for Events
- Organize Travel
- Show Students where to find resources
- Allow Students to Learn in a safe environment

“Tell me, and I’ll forget. Show me, and I’ll remember. Involve me, and I’ll learn.”
– Marla Jones

PRO TIP: Register teams early to have the best opportunities to attend local events, plan out your season and participate in trainings
Develop your team

- A drone for every team (1 drone = 1 team)
- It is common for a school/organization to have multiple teams
- Recommended team size is 3-5 Students
- Plan your space
  - When practicing, you may not need a full field set up
- Plan your schedule
  - Some teams meet once a week for a few hours; others will meet more frequently and for longer times
  - Younger students = shorter sessions
- Help your team to set goals
- Celebrate successes
Teams keep a Logbook and document

- Game Analysis
- Drone Data
- Safety Plans
- Flight Logs
- Drone Career Connections
The Equipment

RECF.ORG
Grant Assistance

Grant Assistance Available

The REC Foundation partners with organizations (including NASA) to offer grant packages for new teams, returning teams and event Partners.

Packages can include
● Drones
● Field Elements
● Game Elements
● Team Registration Fees

www.recf.org/grants

APPLY TODAY
The CoDrone EDU

CoDrone EDU is a programmable drone ideal for learning

- Python or Block-Based Coding
- 7 Sensors
  - Color Sensor
  - Bottom Range
  - Front Range
  - Gyroscope
  - Optical Flow
  - Accelerometer
  - Barometer

Note: The JROTC edition was created to meet funding requirements for the JROTC programs. It's the same drone as the CoDrone EDU, but with specific components sourced from different manufacturers to meet those requirements.
Pro Tip: If funds are limited, get creative. Use pool noodles, hula hoops, and boxes. Approximate measurements of the field elements can be found in the competition manual.

Field Element Kit
One time purchase that can be used year after year. Ideal for setting up practice fields and even hosting your own events.

Field Element Kit - $1,000 and includes:

- 3 Sets of Arch Gate Hardware
- 5 Fabric Arch Gates (2 Red, 2 Blue, 1 Screen)
- 2 Keyhole Gates (1 Yellow, 1 Green)
- 2 Landing Pads (1 Red, 1 Blue)
- 2 Cubes 12” (1 Red, 1 Blue)
- 2 Cubes 18” (1 Red, 1 Blue)
These will change every season based on the missions designed. New Game Elements for Mission 2025 will be available for preorder in May and will be delivered in September.

Mission 2025: Price $350

The Aerial Drone Competition also uses PVC Pipe to create field perimeters and game obstacles. This can be purchased at your local hardware store and is used from season to season.

Mission 2025: Price estimated $200
Registration Fees
Event Registration
Funds go to the person/organization hosting the competition and help cover costs including:
- Venue Rental
- Competition Fields
- Audio/Video Equipment
- Trophies
- Volunteer Lunches
- ...and more

Typically $50 - $100 per team per event - varies by region

Season Registration
Funds go to REC Foundation and help cover costs of the program including:
- Coach and Event Partner Support and Training
- Competition Design and Rule Development
- Scoring Software
- Judging Rubric and Volunteer Training
- ...and more

$175 Per Team
Most organizations have multiple teams.

PRO TIP: You can host your own event as a fundraiser to support your teams.

Registration Fees
Two types of registration fees
Season Registration and Event Registration
Registration

Ready to be part of our mission?

1. Purchase your Drones at Robolink.com
2. Register your Teams at RobotEvents.com
3. Complete a background check.
4. Create teams of students (3-5 students per team)
5. Bookmark REC Library for more support
6. Register your teams for a Local Competition
7. Ask us about hosting your own event
8. Volunteer at an Event! You will learn so much by being a referee or judge and take that information back to your own team
9. Have fun!
It’s not a race. It’s a challenge. Take flight with the Aerial Drone Competition!

Drones in Action

NASA Langley Drone Competition

“To have a sport that’s related to skills needed right now for jobs that are emerging is awesome.”

-Coach Kovach

Albuquerque Public Schools News