2022

REC FOUNDATION
COACH
SUMMIT

Aerial Drone Competition
Louann Cormier

About

- Parent who started a team in her basement with no experience
- Volunteer & Coach for VEX Robotics Programs and Tournaments
- New England Regional Support Manager 2019 - 2021
- Aerial Drone Competition Game Design Committee Member
- Current Project Manager for Aerial Drone Competition and Online Challenges
- Married for 25 years with 3 Young Adult Children who all support my crazy and wild journey with robotics and drones

Louann Cormier

Drone Program Manager

Louann_cormier@roboticseducation.org

202-809-0547

Why Drones

Space Exploration - Search and Rescue - Shipping
Cinematography - Agriculture - Construction - Mining
Conservation - Utility Companies - Firefighting - Sports

Drones are quickly finding their way into
our everyday lives.

The industry application are constantly
expanding as are the number of jobs
waiting to be filled.

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

AERIAL *DRONE* COMPETITION

REC FOUNDATION

Coaches Expectations

Coach Expectations

NO EXPERIENCE REQUIRED

The role of the coach is to facilitate the team and guide the students. Keeping your program STUDENT CENTERED, builds ownership and and drives student motivation and engagement.

Coaches Roles

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

AERIAL *DRONE* COMPETITION

REC FOUNDATION

Developing your Team

Develop Your Teams

Tips and Suggestions - Do what make sense for your group and organization - No one correct way

- Check out the Team Guide
- Each team will have it's own drone
- It is common for a school/organization to have multiple teams
- Average team 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 do better in shorter spurts

Assign Team Roles

Tips and Suggestions - Do what make sense for your group and organization. Lots of options!

Team Role Suggestions

- Drone Pilots
- Programmers
- Visual Observers
- Notebook Documentor
- Team Scout

Additional Team Role Suggestions

- Team Captain
- Fundraising Coordinator
- T-Shirt Designer
- Videographer/Photographer
- Outreach Coordinator
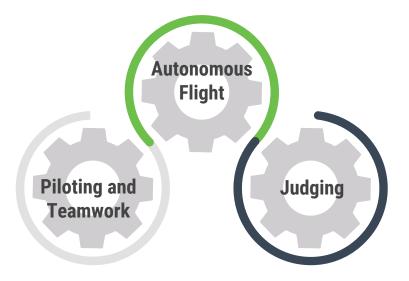- Flight Crew Manager
- BE CREATIVE!!!

AERIAL*DRONE* COMPETITION

REC FOUNDATION

Competitions

Aerial Drone Competitions

Competitions are open to Middle School and High School students who compete in Local and National Events.

Three Competitions - **One** Event

Piloting and Teamwork
Drones are piloted by students in 2v2 matches. Alliances work together to maximize their score against their opponents in a 2 ½ minute match.

Autonomous Flight
Drone is programmed by students to operate entirely autonomously. Each team competes alone to score as many points as possible in a 1-minute match.

Judging
Teams talk with Judges about their Drone, Programming and Competition Logbook.

Autonomous Flight

Piloting and Teamwork

Judging

Piloting and Teamwork Competition
2021-2022 Drone Competition: DownDraft 2

Piloting and Teamwork Competition - Two (2) Alliances - one (1) "red" and one (1) "blue" - composed of two (2) Teams each, compete in 3-minute matches. The object of the game is to attain a higher score than the opposing alliance by scoring small and large balls in corner and floor goals and landing drones in the landing zone at the end of the match.

Game Manual

The 2022-2023 Game will be released September 2022

Autonomous Flight

Autonomous Flight - One team competes against the clock to score as many points in a 1-minute match. Drones are entirely autonomous.
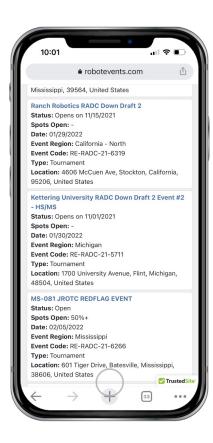
Judging

- **Excellence Award** - presented to the Top Overall Team
- **Flight Operations Award** - is presented to a team that demonstrates an organized and systematic approach to planning and strategizing, project and time management, and team organization
- **Programming Award** - is presented 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** - is presented to a team that demonstrates passion and positivity for the Aerial Drone Program.
- **Judges Award** - is earned by a team that distinguishes themselves in some way that may not fit in other award categories.

AERIAL*DRONE* COMPETITION

Sample Competition Agenda

- 7:30 AM Doors Open, Inspections Begin
- 8:00 AM Autonomous Flight Skills Matches Begin
- 9:30 AM Autonomous Flight Skills Matches Close
- 9:30 AM Team Meeting
- 10:00 AM Qualification Matches Begin
- 12:00 PM Lunch Break
- 12:30 PM Qualification Matches Resume
- 2:00 PM Alliance Selection Begins
- 2:45 PM Finals Begin
- 3:30 PM Awards

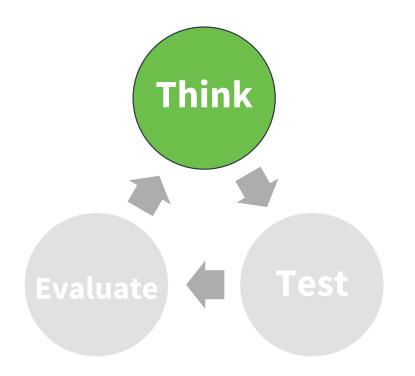Leagues are also another option

Competition Logbook

Competition Logbook

Teams are encouraged to use a Competition Logbook to explain how they approached planning and strategizing their Aerial Drone Competition season using the design process.

Design Process

Think

Think about a problem and brainstorm solutions. Write down and draw out your ideas and solutions. Plan how you will implement the ideas and solutions.
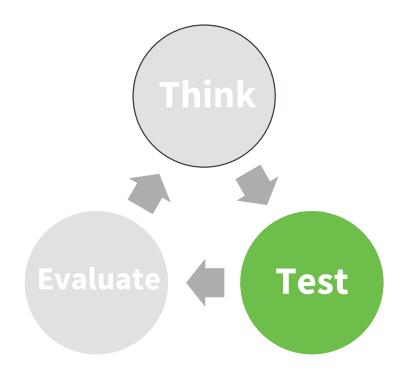
Think

Evaluate

Test

Helpful Hint:
Be sure to write down the ideas and solutions in your Competition Logbook!

Design **Process**

Test

TEST something; implement your solutions and ideas; take action to solve the problem or try to prove out your ideas.
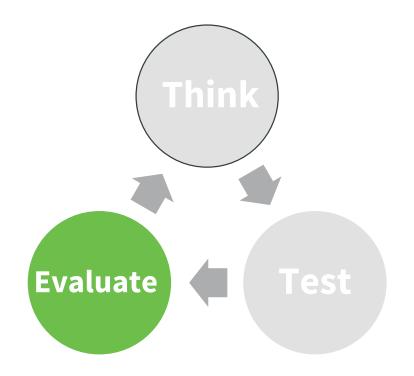

Helpful Hint:
Be sure to write down the ideas and solutions in your Competition Logbook!

Design Process

Evaluate **Evaluate** your ideas and solutions. Is the challenge fully solved? If not, return to THINK and repeat the process. Remember that unsolved challenges are an expected part of the design process!

Helpful Hint:
Be sure to write down the ideas and solutions in your Competition Logbook!

Equipment Needs and Costs

Drones

For the 2022- 2023 Competition Season, you have **3** drone options can be used at Aerial Drone Competitions.

- CoDrone EDU
- Parrot Mambo
- FTW DIY Mambo

The CoDrone EDU can be ordered at [Robolink](#) for $214.99.

The Parrot Mambo and FTW DIY Mambo are hard to find/order at this time. If you have or can find one, either is legal for competition.

Field Elements

Arch Gates, Keyhole Gates and Landing pads will be used every season as part of the game. The layout may change, but it is a one time purchase that will last many season with proper care. This is an optional purchase for teams and is not required, but is helpful.

Estimated Cost: $1050 plus shipping

Small Keyhole Gates

Arch Gates

Landing Pads

Game Elements

Every year the smaller elements used to play the game changes, to keep it fresh and exciting. Last season game elements included balls and ball holders to play the DownDraft2 Game.

Open Ball Holders

Small Balls

Covered Ball Holders

Large Balls

Next Season's game will be revealed in early September and you will be able to purchase the game elements for that game then. We've got some great surprised and fun things planned for the 2022-2023 game!

Estimated Cost: $275 plus shipping

AERIAL *DRONE* COMPETITION

REC FOUNDATION

Season Dates and Registration Costs

AERIAL*DRONE*COMPETITION

- **September**   **2022-2023**

      Game Reveal

- **October**

           Workshops/Scrimmages

- **November - March**   **Local**

Team Registration

Number of Teams Registered	Registration Fee
1 Team	$200
2 Teams	$350
3 Teams	$500
4 Teams	$650
Up to 22 Teams	$650

✓ **NEW for 2022- 2023 Organizational Flat Rate! $650 for 4-22 teams**

Please note: Organizational Flat Fee is per Program. For example, if an organization has a High School Aerial Drone Program and a High School VEX Robotics program, the organization will incur two Organizational Flat Fees - one per program.

AERIAL ***DRONE*** **COMPETITION**

REC FOUNDATION

Register your teams now at RobotEvents.com
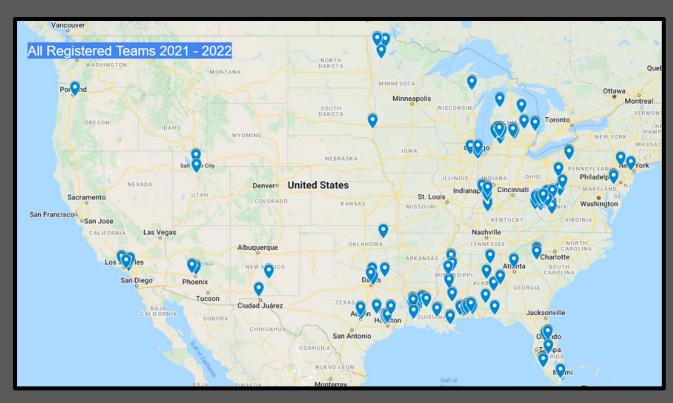
Competition Registration

Competition Registration

Each event has its own registration fee and it varies by region and size. A typical Aerial Drone Competition Event is $40 - $100 per team.

Many teams will host their own event! With the REC Foundation, we support you to run your own local events and keep the registration fees. A great fundraiser for your organization!

Register for events now at RobotEvents.com

All Registered Teams 2021 - 2022

New teams are being added monthly! Reach out to drones@roboticseducation.org to find out how to start teams in your area.

THANK YOU

Contact

Louann Cormier
Aerial Drone Competition Program Manager
drones@roboticseducation.org or
Louann_Cormier@roboticseducation.org

Learn More