

Welcome to the Drone Discovery!

Introduction

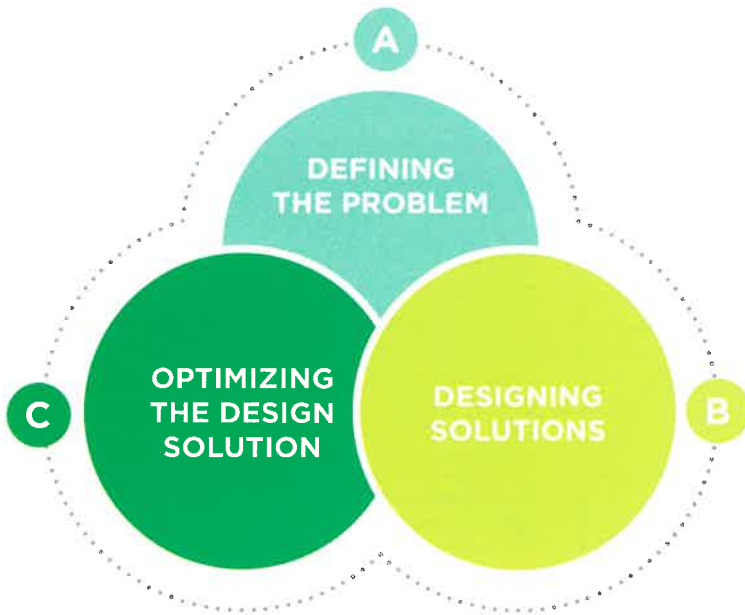
In October 2016, you will become part of the biggest youth science event in the nation: 4-H National Youth Science Day (NYSD). With the help of thousands of volunteers and educators from the country's 110 land-grant universities, you and millions of other youth will become 4-H engineers for the day and engage in the ninth annual NYSD.

During this year's challenge, you will explore how drone engineering and remote sensing can be used to solve real world problems, such as helping a community develop climate change resiliency and energy sustainability.

Mission Drone Discovery

To succeed in this challenge, you'll need to think like an engineer as you design, build and test drones. There are many different kinds of engineers and different ways to approach a challenge. What kind of engineer do you think you'll need to be in order to master drone technology?

The engineering design process has three basic steps: define, design and optimize.



- A** **Defining engineering problems** involves stating the problem to be solved as clearly as possible in terms of criteria for success and constraints or limits.
- B** **Designing solutions to engineering problems** begins with generating a number of possible solutions, then evaluating those solutions to see which ones best meet the criteria and constraints of the problem.
- C** **Optimizing the design solution** involves a process in which solutions are systematically tested and refined, and the final design is improved by trading off less important features for those that are more important.

Your Drone Discovery challenge is to work through the engineering design process with your team of engineers to build two different kinds of drones: a Foam Drone and a Code Drone.

Let's get started!

What are drones?

What do you know about drones? Draw a picture of what you think a drone is and what it can be used for.

What's in a name?

Drone, UAV, UAS, RPV, RPA, RPS? All of these are names for flying, sensing vehicles that are piloted remotely. All of these vehicles are very similar. The name you choose depends on how you intend to use it.

- UAV: Unmanned Aerial Vehicle
- UAS: Unmanned Aerial System
- RPA: Remotely Piloted Aircraft
- RPS: Remotely Piloted System

