

## Activity: Design Criteria Worksheet

### Overview

Good design starts with a well-defined set of design criteria informed by user research, use case scenarios, performance goals, time, and budget. Design criteria state the important characteristics that your design must meet in order to be successful.

### Time

60 minutes

### Instructions

To complete this activity, use the included worksheet as a guide to develop the design criteria for a drone of your own design. Make sure start with a design statement explaining the situation and challenge.

## Design Criteria Worksheet

Describe the situation and challenge?

List the design criteria and constraints

### **Post disaster search RPA (remote piloted aircraft) criteria**

- Ease of transport

### **Flight time**

- Minimum 15min flight time
- Good thrust ratio of at least 2:1 @ 50% throttle
- Ability to configure batteries and components

### **Camera**

- Live camera feed
- Protected components
- Fast and maneuverable
- Ability to customize
  - Thermal imaging
  - GPS location
- **Transportation requirements**
- Minimal size
- Low profile
- Fully assembled
- Protected components
- "Backpack drone"

### **Weight**

- Based on battery and prop selection
- Electronics 200-300g

### **Battery**

- 3s or 4s batteries in parallel
- Capacity requirements based on flight **time**

List the design criteria and constraints (continued)

**Materials**

- SLS 3D print
- Nylon based material

**Aesthetics**

**Safety**

- Protected props

Tools, Materials and Resources