- 3D Printers
  - DO NOT USE MAKERBOT
    - nozzle breaks often, replacing parts is a hassle
  - RepRap
    - Great community, open source, good for tinkering
  - Makers Toolworks Mendel Max
  - SeeMe CNC Orion Delta
  - LulzBot
    - Best bang for your buck, one of the best printers on the market
  - Ultimaker
- Printing Materials
  - PLA
    - Depends on manufacturer; poor quality control can lead to variable filament diameter, which affects extrusion rate
    - Stiff, lightweight, easy to print
    - Will snap, especially in between layers
  - Polycarbonate
    - Will not break, layers essentially disappear into each other, but difficult to print
  - Nylon
    - Very bendy, super strong
  - Layer adhesion does pose a challenge, as it makes printed materials weak. Orienting a part so that forces acting on it in the air will not cause failure in between layers is important
- Battery
  - Use highest voltage possible - pick motor that works with it
  - Choose after complete payload design
  - Just need regulators and speed controllers
    - Castle Speed Controllers - Castle Link can be used to reprogram anywhere anytime
    - BECS
- Motor
  - Overbuild, overprop
  - Big speed controller
  - Motors to consider: NEU, Hacker, Axi, Hyperion
  - Go with an outrunner, don't make it a pusher
  - RC groups will have motor recommendations
- Props
  - Fixed props
  - Wood is good, but composites last longer

  - carbon fill carbon resin
  - Props to consider: Graupner, Aeronaut, Zinger

- Design Ideas
  - 3D print ribs and cover wings with fabric
    - Notes from Aerocats
      - Balsa, basswood, used for frame and spars
      - Wings are covered in MonoKote or UltraCote which is essentially a heat shrink heavy duty Saran wrap
      - MonoKote - adhesive on one side, manufactured by Top Flite
      - UltraCote - same as MonoKote, manufactured by Horizon
      - These wraps seem easy to apply and very affordable, according to Mark Fellows they are both incredibly strong, as the Aerocats planes carry 30lb payloads
  - Foam wings with carbon fibber spars
    - Print airfoil guide for hot wire
    - Make wings modular, able to use different wings
  - Camera payload
    - Global shutter - All pixels at once
    - Rolling shutter - one line at a time, not good with camera movement
    - Determine when to take pictures, minimize vibrations
  - Hand launch
    - Statically stable aircraft