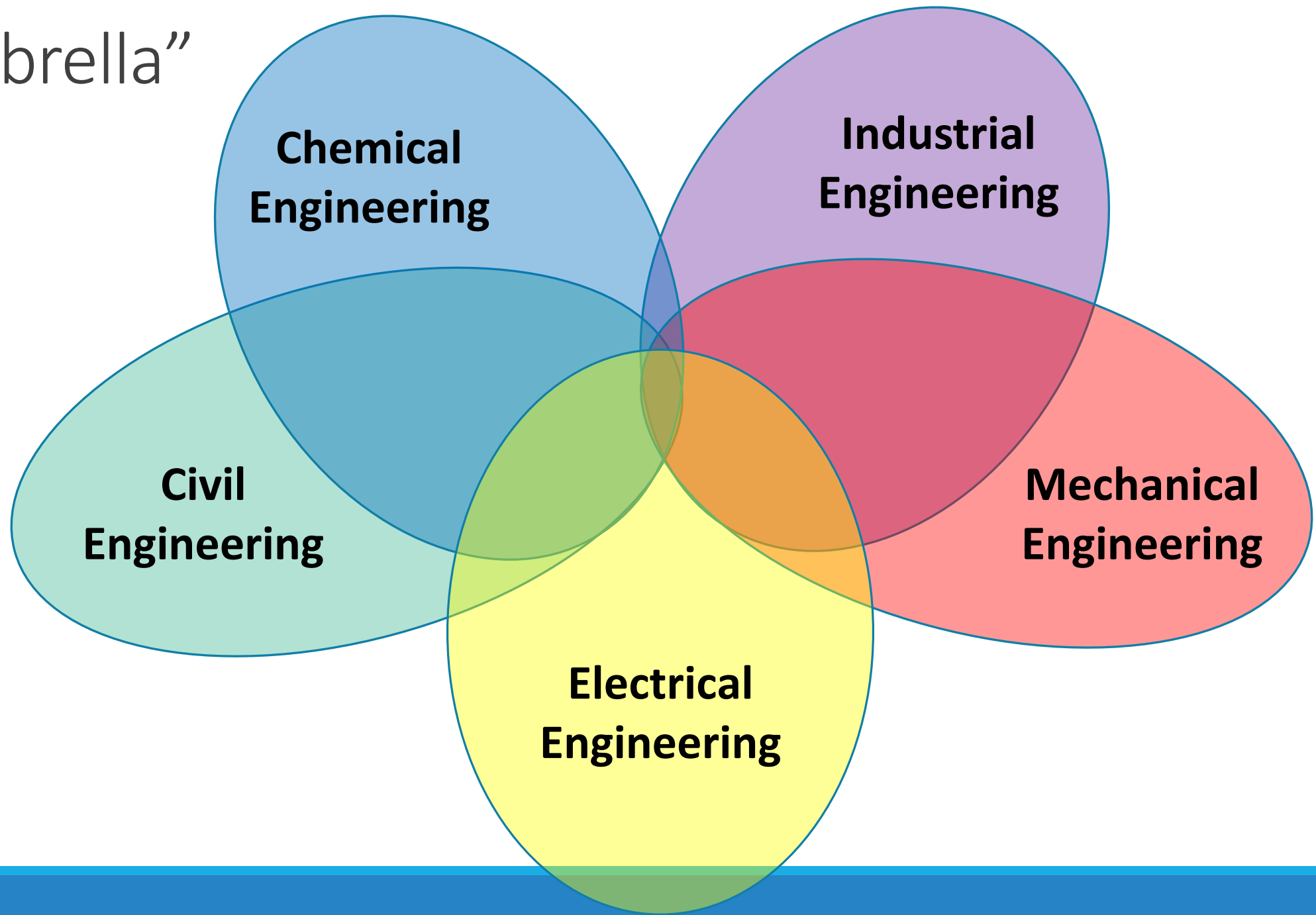


Question: What do you like about
Aerospace Engineering?

Intro Video to Aerospace Engineering

https://www.youtube.com/watch?time_continue=4&v=UvtYn2j78gw&feature=emb_title

Major “Umbrella” Disciplines



Mechanical Engineering

Design, produce, operate, and
service machines and mechanical
devices

Mechanical Engineer

Acoustic Engineer

Automotive Engineer

Aerospace Engineer

Mechanical Engineering

Design, produce, operate, and service machines and mechanical devices

Second largest engineering discipline after electrical engineering

Often involved in automating time-consuming or expensive procedures

Composed of 2 main divisions:

1) Design and controls is concerned with:

- The strength of machine parts and the stress that each part will be subjected to
- Developing tools that help the design engineer design a machine
- Controlling machines through mechanical, hydraulic, and digital controls
- Minimizing the unwanted noise of a machine

2) Thermal science is concerned with:

- The flow of fluids and energy between systems
- Study and predict the temperature of machines parts, and design cooling devices for them
- Heating, ventilating, and air conditioning of buildings
- Performance and efficiency of large power generation plants, and developing alternative energy sources

Aerospace Engineering

Design, develop, test, and help manufacture aircraft, missiles, and spacecraft

Develop new technologies for military and commercial use

Can be divided into 2 fields:

- Aeronautical engineering: works with aircrafts
- Astronautical engineering: works with spacecrafts

Can specialize in many fields, ranging from propulsion to thermodynamics

Employment in Aerospace Engineering

Common Types of work

- Research and Development (R&D)
- Military & Defense
- Testing and Simulation
- Software

Big Employers

- Government contractors
 - Lockheed Martin
 - Raytheon
- NASA
- Universities and other research groups

What we're doing

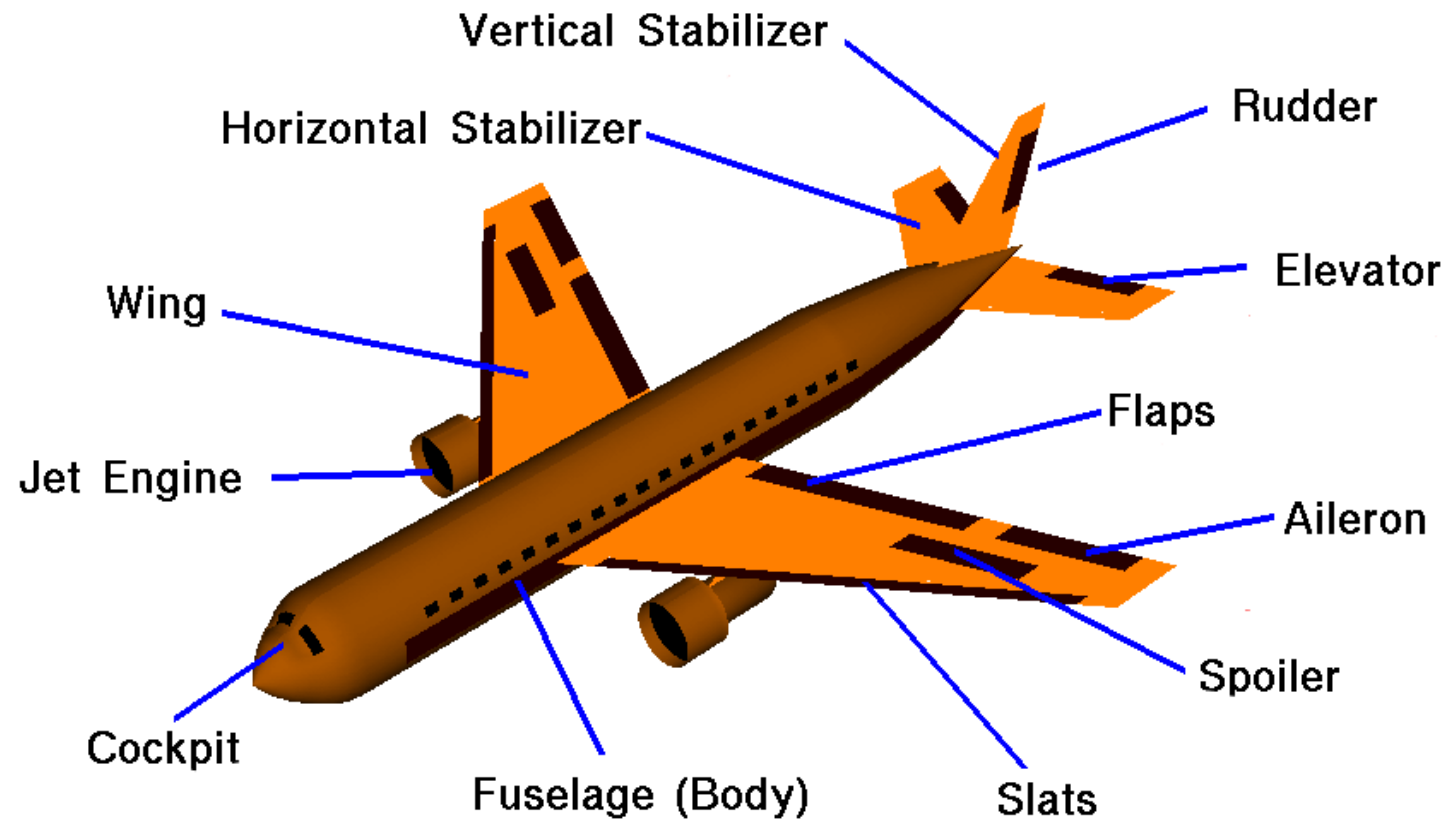
Intro to Aerospace Engineering

Key Terms

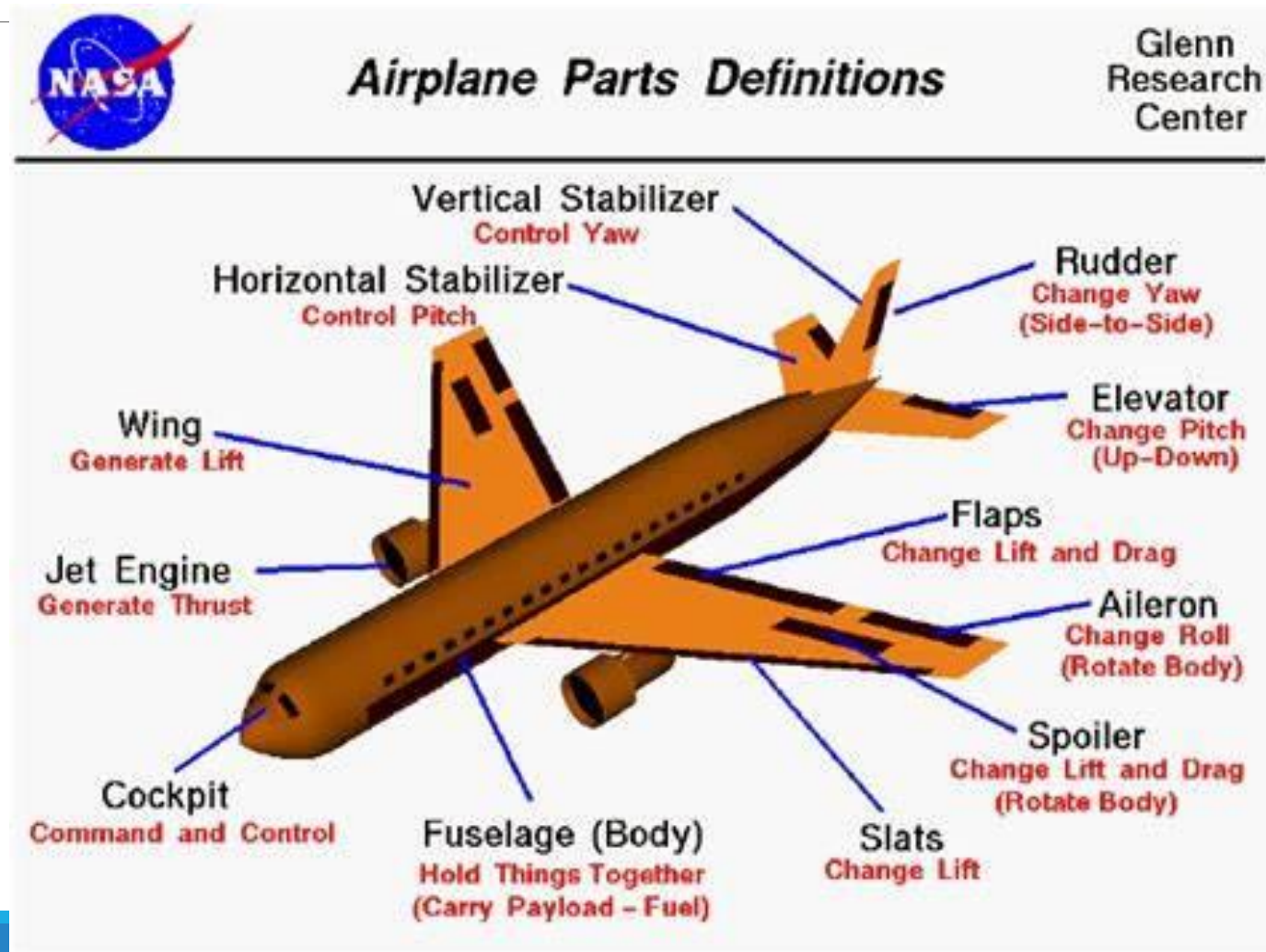
Understanding Bernoulli's Principle and Newton's Laws

Bottle Rocket Design Project

Terms: Parts of a Plane



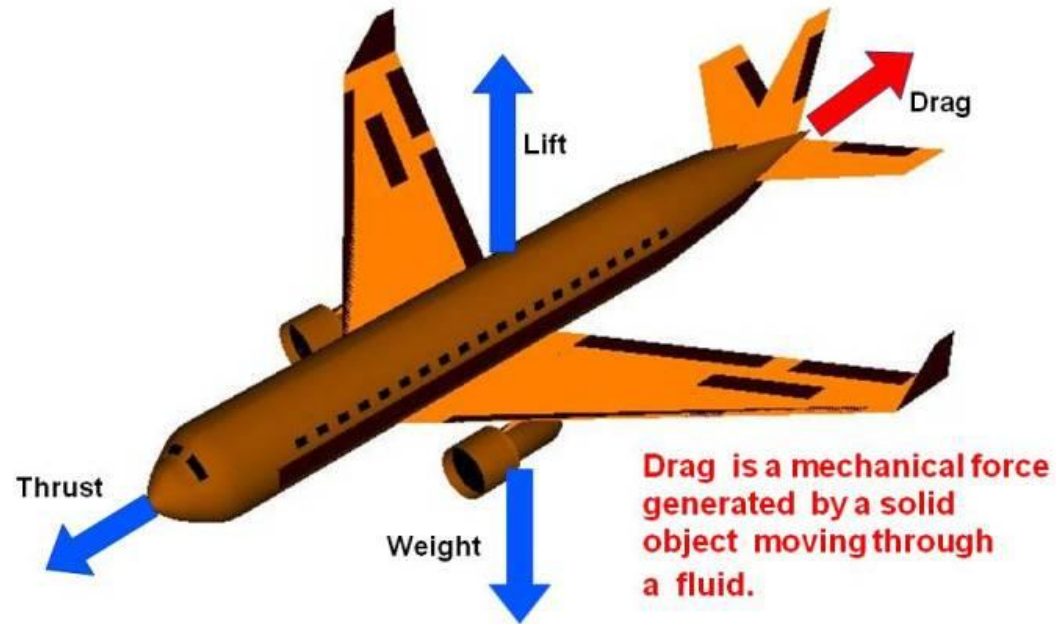
Terms: Parts of a Plane



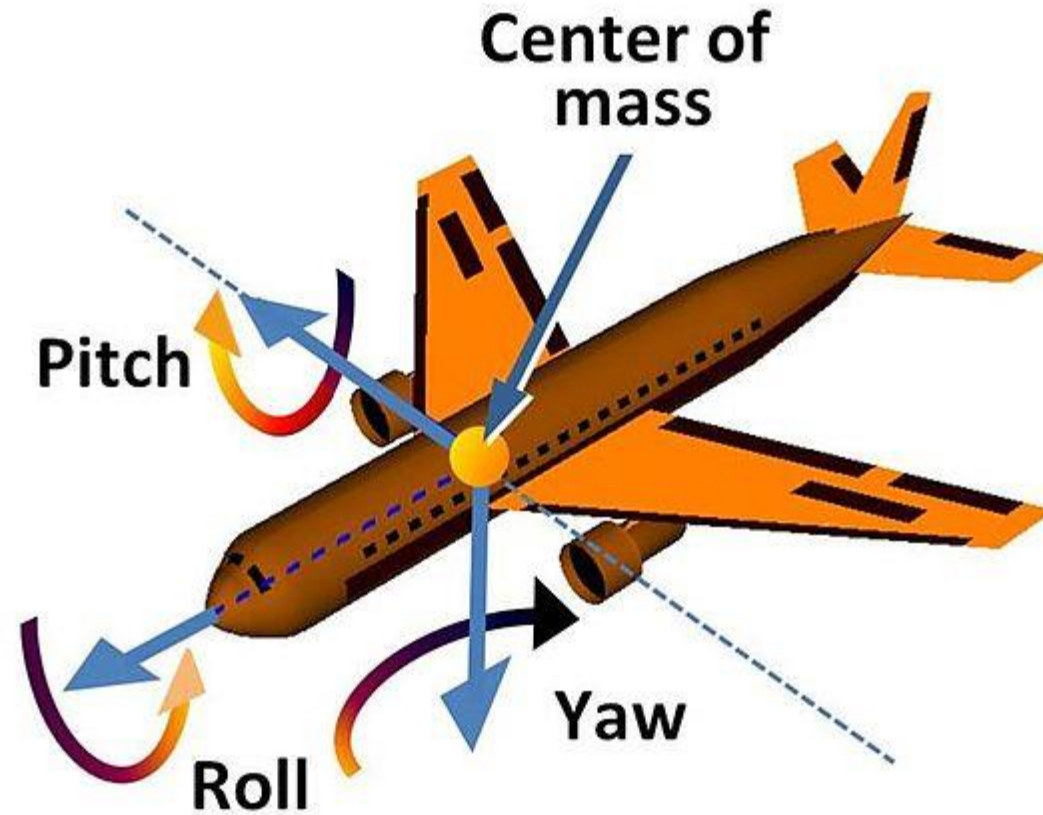
Terms: Forces of Flight

National Aeronautics and Space Administration

What is Drag ?



Terms: Flight Motion



Terms: Key Principles

Newton's 3rd law of motion

Bernoulli's Principle

So you Want to be an Aerospace Engineer... what should you be doing now?

An aerospace engineering degree is very math & science heavy, even compared to engineers

- Take advanced physics (mechanical, not so much Electricity & Magnetism) and Math classes

Research universities that offer an AE degree

Get in contact with Aerospace Engineers to gain an understanding for what their jobs are like

- Join professional organizations: AIAA

To Do Today

1. Complete the Aerospace Engineering Key Terms sheet (either digitally or on paper)
2. Make a model (paper) airplane and label 8 key parts of your plane
3. SHOW ME YOUR ARDUINO CODE PRESENTATION!!!