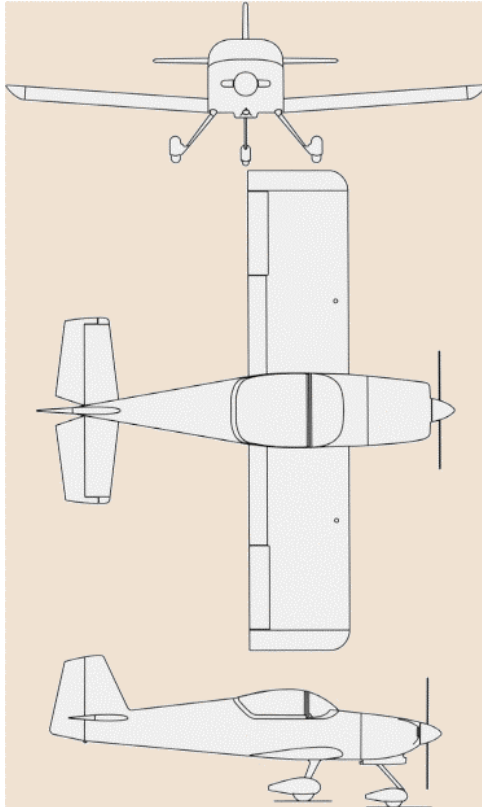


Physics of Flight BHHS 2023-2024



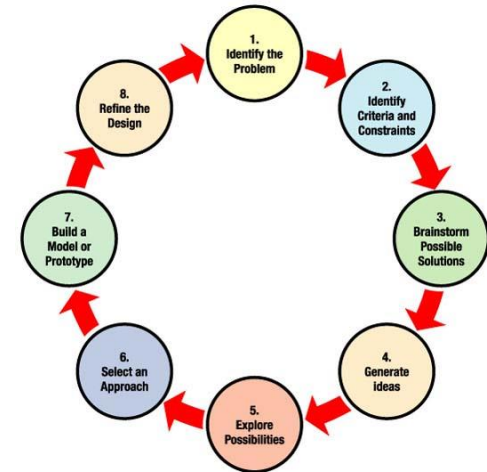
What part of
 $L = \frac{1}{2} \rho v^2 s C_L$
don't you understand?

GENERAL EXPECTATIONS

- Students will be expected to develop and exercise self-directed work habits, and appropriate classroom behavior.
- Because we will construct items designed in class, safety procedures will be learned and enforced. Failure to follow procedures will result in loss of shop privileges in this class.
- Students are expected to bring necessary supplies to class every day.
- Grades are based on the district's grading scale and are 100% [21st Century Skills](#).

Curriculum

Coursework will focus heavily on the engineering design process.



Students will face design challenges that they must solve. The challenges will require the students to apply their knowledge of physics in their solution design.

Below are the topics to be covered and the applicable [Next Generation Science Standards](#) adopted by Washington State. For more details, view the Framework available on my [webpage](#).

Air pressure experiments

(HS-ETS1-2, 3, 4, HS-PS2-1)

Kites
Frisbees
Parachutes

Wing design

(HS-ETS1-2, 3, 4, HS-PS2-1)

Aspect ratio
Wing planform

Controllable surfaces
Wind tunnel testing
Lift on line
Newtonian physics
AeroLab
Airplane Design Software
SAE plane challenge
NASA styrofoam X-planes
Canards

Aircraft Propulsion Systems

(HS-ETS1-2, 3, 4, HS-PS2-1)

Propulsion systems- Past, present, future
Propeller design challenge

R/C simulator and R/C flying aircraft

(HS-PS2-1)

Fly remote-controlled aircraft in simulators and then outside

Cross-Country planning

(HS-ETS1-3, 4)

Sectionals
E6B computers
Radio communications
Flight simulator
Flight competition

Aircraft design project

(HS-ETS1-2, 3, 4)

Design a real aircraft using professional design software.

Aircraft Projects

We will be incorporating many components of the [CorePlus](#) curriculum as the students learn how to work safely in a manufacturing environment.

Students will have the opportunity to work on aircraft projects that are designed for small children and two flying aircraft projects.

Pedal Planes such as this P-51



[Sonex Onex](#)



[Vans RV-12](#)

