**Glider and Airplane links**

**Additional Resources**

[www.physicsclassroom.com](http://www.physicsclassroom.com)

[www.grc.nasa.gov/WWW/k-12/airplane/short.html](http://www.grc.nasa.gov/WWW/k-12/airplane/short.html)

**Introduction**

Introduction ♣ Build a foam plate glider (FPG-9) as an ice breaker. <http://www.modelaircraft.org/files/education/docs/fpg9instr.pdf>

The NASA web site contains much of the aircraft science and math that is applicable to this program.

[www.grc.nasa.gov/WWW/k-12/airplane/short.html](http://www.grc.nasa.gov/WWW/k-12/airplane/short.html)

This site is a clickable index. Pick your subject and a click shows the Power Point and description. (NASA Aerodynamics Index is attached)

There are many online resources to do this including, the teach engineering resource (<http://www.teachengineering.org/engrdesignprocess.php>)

and the science buddies website (<https://www.sciencebuddies.org/science-fair-projects/engineering-design-process/engineering-design-process-steps>)

and the NASA web site (<https://www.nasa.gov/audience/foreducators/best/edp.html>)

Have the students create their own design notebooks. MESA students will use the journal to document the information gathering process they engaged in and any relevant information that will prepare them for designing and building their competition ready package. The logbook can also follow throughout the different stages of the project. Regular entries into notebook/journal are an essential part pf this unit/project.

<https://www.sciencebuddies.org/blog/2010/01/lab-notebooks.php>

Planning and Brainstorming At this point the students should get experience building a small glider (~7 inch wingspan). A huge variety of plans can be found by “googling” “plans for balsawood gliders”. The airplane building students can also search “rubber powered flying model airplanes”.

A few examples include;

<http://www.amaflightschool.org/diy>

<http://www.ericbrasseur.org/glider_physics.html>

<http://www.theplanpage.com/How%20To%20Articles/How%20to%20Articles.htm>

<http://www.rubber-power.com/make-it.htm>