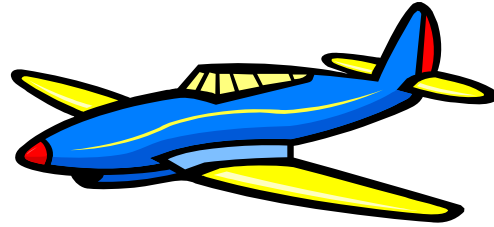


Powered Flight

Aircraft Design Activity

Situation

Design and make a powered aircraft using given materials and using the 'power pole' as a source of power.



Resources

Time	15-20 class periods
People	One or two
Energy	Electrical
Information	History of flight, ratios, four in flight forces (thrust, lift, weight, drag), Bernoulli's principle, Bernoulli's equation calculations, airfoil design
Money	None
Tools	Hot glue gun, razor saws, x-acto knives, Styrofoam wire cutter, computer, plotter, Foilsim software
Materials	Styrofoam, DC motors, balsa wood, propellers, craft sticks, paper, tissue paper, Elmer's glue, hot glue sticks, any other approved by teacher
Space	No limitation

Other Criteria

- The aircraft must maintain smooth flight for an extended period of time.
- The aircraft must maintain elements of safety during operation.
- Attention must be paid to the aesthetic value of the aircraft.

Required

Documentation

The following must be handed in your design portfolio at the end of the activity:

1. Research sources and notes.
2. Design sketches, notes, and drawings from all group members.
3. One final design drawing (to be completed before you receive materials).
4. Records of all tests and adjustments.