

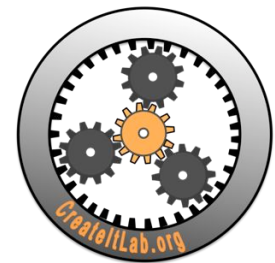
# Spin Glider

By Create It Lab (Createlab.org)



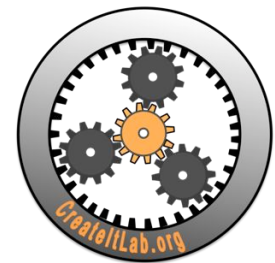
An easily assembled, fun toy that demonstrates aerodynamic principles.

This document includes a list of materials required, assembly instructions, and a discussion of the aerodynamic principles involved.



# Materials

- Two plastic drinking cups
  - These will form the airfoil
- Rubber bands
  - Enough bands such that when joined, they will be 12 inches long
  - The combined band will provide the power
- Tape (or Glue) compatible with plastic
- Magic marker pen
  - This is the launch handle
  - Pen should have clip very close to the end of the pen

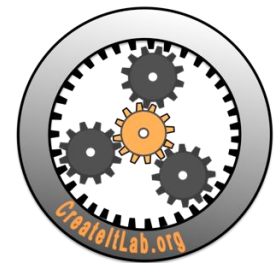


# Assembly

1. Stack the cups by placing the two bottoms together
2. Tape top cup to bottom cup with at least 4 pieces of tape
3. Reinforce joint by wrapping tape around circumference of cups at the joint. (Tape is marked red.)

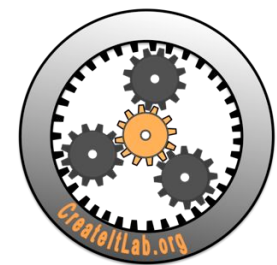


4. Join rubber bands together by inserting one band through the other and then looping it through itself.
5. Put one end of joined band through clip on pen.



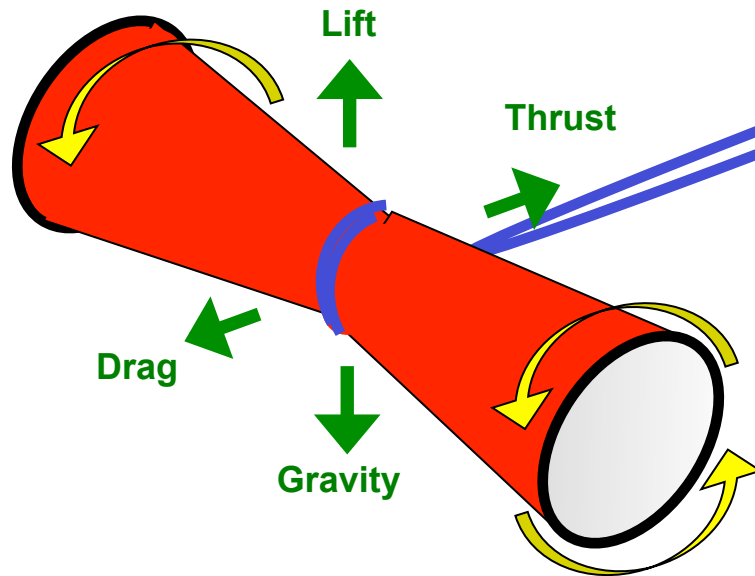
# Operation

- Place pen with rubber band on table making a line with the pen farthest from you
- Place center of joined cups above the end of rubber band closest to you with approximately 1 inch of band exposed
- While holding the loose end of the rubber band on top of the cups, stretch rubber band and wind it around the cups at the center line.
  - The band should be wrapped **at least** twice around the cups
- Continue to hold the band in place, lift both the cup and the pen in front of you with the pen furthest from your body and the band coming off the bottom of the cups.
- Pull straight back on the cups to stretch the elastic and keep band horizontal.
- Release cups and observe flight

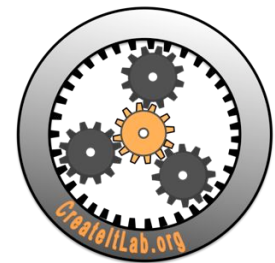


# Spin Glider aerodynamics

Low Pressure above glider

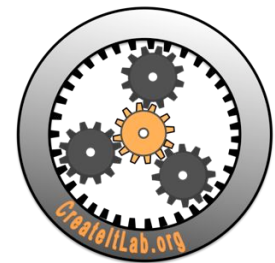
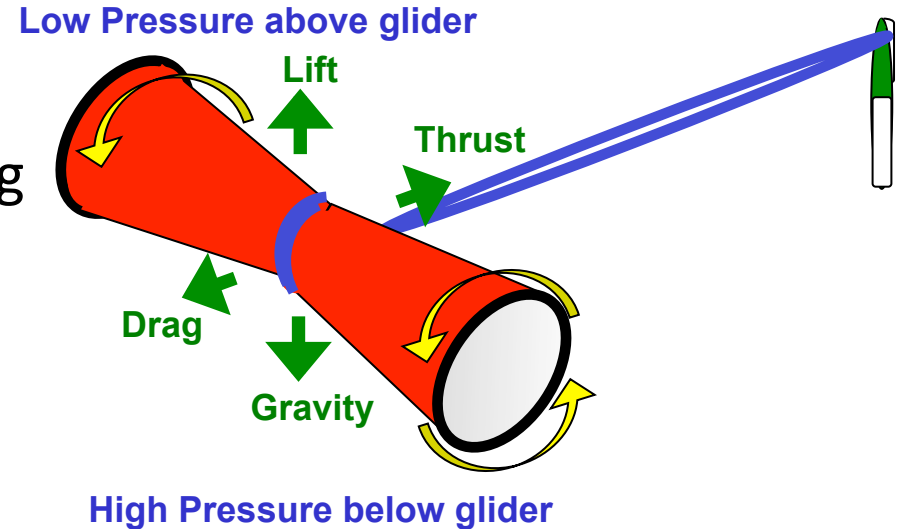


High Pressure below glider



# Spin Glider Aerodynamics

- The spin at the top of the cups is in the opposite direction of the flight of the cups, creating a low pressure region.
- The spin at the bottom of the cups is in the same direction of the flight of the cups, creating a high pressure region.
- The combination of the high and low pressure regions creates lift and the airfoil gains altitude.



# SPIN GLIDER AERODYNAMICS

MAKE A BETTER SPIN GLIDER ! JUST FOLLOW THE **DESIGN CYCLE!**

