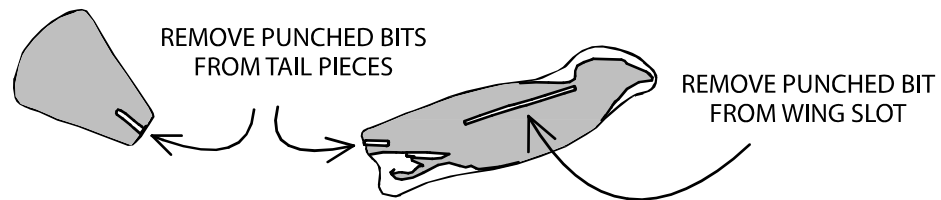


EXPERIMENTS WITH GLIDERS

Today we'll be performing experiments with bird gliders. In a scientific experiment, you change one condition at a time to see how the outcome changes.

WHAT YOU NEED: your gliders and large plastic-coated paper clips.
(The gliders might be birds, dinosaurs, airplanes, or a mix. We use whatever glides best.)

WHAT TO DO:

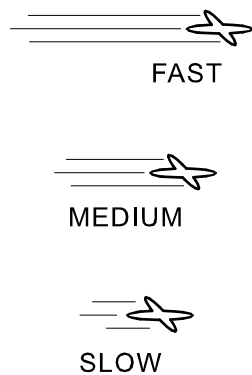


Pull the wing through the slot and move it forward. Slide the tail on. Put the plastic nose guard on and try it indoors. It probably won't go far.

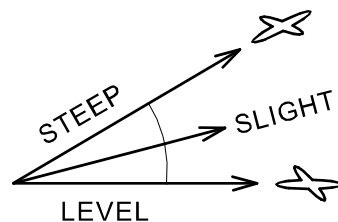
Remove the plastic nose guard from the glider. Put a large plastic-coated paper clip in its place. Now you are ready to try the experiments. These experiments work best outdoors on a calm day.

THE EXPERIMENTS - We will vary 3 things:

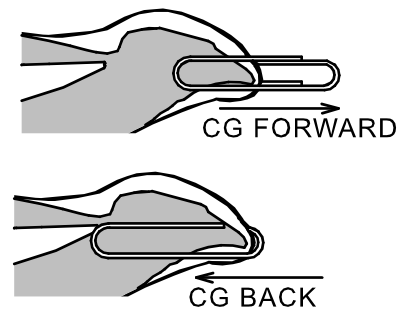
Launch Speed



Launch Angle

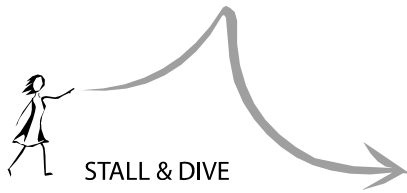


Center of Gravity



Center of Gravity, CG, is the balancing point of the glider. It can be adjusted by moving the paper clip.

By experimenting with launch speed, launch angle, and center of gravity, which of these can you make your glider do? Record how below each.

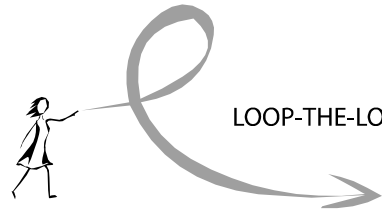


STALL & DIVE

Launch Speed (circle one)
 slow medium fast

Launch Angle (circle one)
 level slight steep

Center of Gravity (circle one)
 back forward

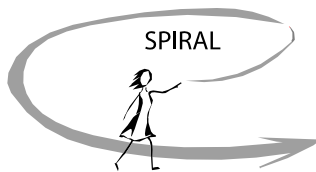


LOOP-THE-LOOP

Launch Speed (circle one)
 slow medium fast

Launch Angle (circle one)
 level slight steep

Center of Gravity (circle one)
 back forward



SPIRAL

Launch Speed (circle one)
 slow medium fast

Launch Angle (circle one)
 level slight steep

Center of Gravity (circle one)
 back forward



LONGEST GLIDE

Launch Speed (circle one)
 slow medium fast

Launch Angle (circle one)
 level slight steep

Center of Gravity (circle one)
 back forward

Did you notice that when the glider gained height it lost speed?

Did you notice that when the glider lost height it gained speed?

Birds can change their energies back and forth between speed energy (called KINETIC ENERGY) and height energy (called POTENTIAL ENERGY).

List two examples where something can change its speed into height.

List two examples where something can change its height into speed.

