# Modeling Tutorial: The Wing and Fuselage

**Name:** **Date:** **Period:**

**Reminder**

You already modeled the stabilizers. The wing and fuselage are harder, but the techniques are the same.

Work slowly. Use your measurement sheet. Compare to the physical glider often.

If you get stuck, ask your teacher — do not spend more than 10 minutes stuck on the same step.

## Part 1 — Wing (one panel)

You only need to model one wing panel. The second wing is a mirror image — most software lets you duplicate and flip it.

**Steps:**

- Create a new project called: [Your Name] — Wing.
- Add a Box shape. Set Length = wing length (root to tip), Width = maximum chord (front to back), Height = wing thickness.
- If the wing tapers toward the tip: use a Wedge shape as a hole to cut the tip into a taper. Match the root width and tip width from your measurements.
- If the wing has a swept shape: rotate the wing body to the correct angle before finalizing dimensions. (Hint: place a wedge cut on the leading or trailing edge to create the sweep.)
- Group all pieces into one wing panel.
- Duplicate the wing panel. Flip the duplicate horizontally to create the mirror image.
- Compare both wings to the physical glider. Do they look correct?
- Save your work.

**Checkpoint: Screenshot or sketch your two wing panels below. Label the length, maximum width, and sweep direction (if any).**

Screenshot / Sketch:

## Part 2 — Fuselage

The fuselage is the most complex part. Build it in layers — main body first, then add each slot.

**Steps:**

- Create a new project called: [Your Name] — Fuselage.
- Main body: Add a Box. Set Length = total fuselage length, Width = maximum width, Height = maximum height.
- Taper: The back of the fuselage is narrower and shorter than the front. Use a wedge subtraction to taper both the height and width toward the rear. Match your height-at-rear measurement.
- Nose weight slot: Create a small Box sized to the nose slot dimensions. Position it at the correct location (distance from nose). Set it as a hole and subtract from the fuselage.
- Wing slot: Create a Box sized to the wing slot dimensions. Position it at the correct distance from the nose and from the bottom. Set as a hole and subtract.
- Stabilizer slots: Create small Box holes for the horizontal and vertical stabilizer slots at the rear. These are narrow — use caliper measurements.
- Group all remaining pieces into one fuselage shape.
- Compare to the physical fuselage. Check that the slots are in the right locations.
- Save your work.

**Checkpoint: Screenshot or sketch your completed fuselage below.**

Screenshot / Sketch:

**What was the hardest step in building the fuselage? What would you do differently if you modeled it again?**