

## Modeling Tutorial: Stabilizers

Name:

Date:

Period:

### Before You Begin

- Open TinkerCAD (or your software) and log in to your account.
- Open your saved Glider Measurement Sheet and keep it next to your keyboard.
- Create a new project called: [Your Name] — Vertical Stabilizer.
- Have the physical glider nearby so you can compare as you go.

### Part 1 — Vertical Stabilizer

The vertical stabilizer is the upright tail fin. It is mostly a flat shape with angled corners cut away. Start with a box and then cut the corners.

#### Steps:

- Add a Box shape to the workspace.
- Set the dimensions: Length = your base length measurement, Width = your thickness measurement, Height = your maximum height measurement. Enter all values in millimeters.
- Look at the front edge of the physical stabilizer. Does it have a straight angle from the bottom up? Use a Wedge shape (set as a "hole") to cut the front corner away. Match the angle to your slant measurements.
- Do the same for the back corner if it is also angled.
- Select all pieces and group them into one shape (Edit → Group in TinkerCAD).
- Hold the physical stabilizer next to your screen. Does the shape look right? If not, adjust.
- Save your work.

**Checkpoint: Sketch your completed vertical stabilizer below, or paste a screenshot. Label the height and length on your sketch.**

Screenshot / Sketch:

**What was the trickiest part of modeling the vertical stabilizer? How did you solve it?**

## **Part 2 — Horizontal Stabilizer**

The horizontal stabilizer is similar to the vertical one, but it lies flat. It connects across the rear of the fuselage.

### **Steps:**

- Create a new project called: [Your Name] — Horizontal Stabilizer.
- Add a Box shape. Set Length = total length tip-to-tip, Width = chord width, Height = thickness.
- The horizontal stabilizer may have a tapered or angled shape — check the physical part. If the tips are angled, use the same wedge-as-hole technique you used on the vertical stabilizer.
- Group all pieces into one shape.
- Compare to the physical part. Adjust if needed.
- Save your work.

**How does the horizontal stabilizer differ from the vertical stabilizer? Note at least one difference in shape or dimensions.**

**Take a screenshot of both stabilizers side by side and paste it below, or sketch them both.**

Screenshot / Sketch: