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# Engineering Design Challenge: Let It Glide

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NASA has been at the forefront of wing design and is responsible for many of the wing designs in use commercially today. Engineers are constantly working to make aircraft more efficient. They do this by focusing on the shape of the wings to decrease the drag while producing sufficient lift, and by reducing the overall weight as much as possible. Lighter weight and less drag produce higher fuel efficiency.

### The Challenge

Using the engineering design process, students will work in a team to design, develop, and build a shoebox glider and then improve it to produce the greatest glide slope (the ratio of distance traveled to decrease in altitude) possible. Things students should consider in their designs include aircraft and wing materials, shapes, and structure, as well as the weight of the vehicle.

### Criteria and Constraints

1. The glider must include an intact shoebox that simulates a space for a scientific payload to carry instruments for in-flight research.
2. The glider must show improvement in glide slope with a positive percent change over the course of the challenge.
3. The glider must not break apart in flight or upon landing.



*Figure 6. On reentry from space, the space shuttle orbiter did not use engines and landed as a glider. (NASA)*