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| **Glider Design Challenge** |

Introduction

Have you ever tried to fly a glider? Have you made something with balsa wood before? In this project you will learn to do both. This design challenge provides glider constraints to create a glider design using the AERY software package.

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Equipment

* Aviation notebook
* Pencil
* PC with AERY glider design software
* Printer

Procedure

1. Use the Challenge glider constraints shown below.

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| Main: |  | Stabilizer: |  |
| Fuselage Length (cm) | 30 | Span (cm) | 25 |
| Wing Location (cm) | 13 | Root Chord (cm) | 8 |
| Stabilizer Location (cm) | 22 | Taper Ratio | 0.6 |
| Vertical Location (cm) | 22 | Leading Edge Sweep Angle | 15 |
| Nose Mass (g) | 8 |  |  |
| Wing: |  | Vertical Tail: |  |
| Span (cm) | 50 | Height (cm) | 10 |
| Root Chord (cm) | 10 | Root Chord (cm) | 8 |
| Taper Ratio | 1.0 | Taper Ratio | 0.7 |
| Leading Edge Sweep Angle | 0 | Leading Edge Sweep Angle | 15 |
| Launch Velocity (km/hr) | 20 |  |  |

1. Start the AERY glider design software.
2. Click File then New Design.
3. Create a glider design that meets the constraints provided.
4. Modify the design as necessary to achieve stability. Confirm the aircraft stability by clicking Analysis then Will It Fly? or F3.
5. When your design is stable, print out one copy of your design.
6. Save the design to your Aviation folder on your computer.
7. Use your Glider design to begin your construction.

**Conclusion**

1. Explain which glider or aircraft term were difficult to understand and the correct definition.
2. Explain any challenges if someone else were to construct your design using the AERY print.
3. Explain any challenges faced using the AERY software and how you overcame those challenges.