Science Olympiad
2021 National Tournament
Elastic Launched Glider Additional Information

- For the 2021 National Tournament, Elastic Launched Glider will be a Trial Event not counting towards overall team standing.
- This event will be conducted through document and video submission.
- The link to submit materials and the "Event Code Word" that must be spoken at the start of the video will be released in Scilympiad at 4:00 AM PDT/MST on Friday, May 14th.
- All logs, materials, and videos must be uploaded within 48 hours of teams logging into Scilympiad and first accessing the "Event Code Word" but no later than 11:59 PM PDT/MST on May 19th.
- All rules published in the 2021 Science Olympiad Division B Rules Manual for Elastic Launched Glider apply, except that the teams will be providing measuring devices and doing the measurements on video to demonstrate compliance. Timing will remain the responsibility of the Event Supervisor based on video provided.
- Teams will provide one continuous video (e.g.; no editing, no multiple takes) with the following content:
    - Participants should state the "Event Code Word" found by logging into the event in Scilympiad
    - Show conformance to rule **3. Construction Parameters:**
        - Video the gliders from multiple directions, (at least side, top, bottom, front quarter, rear quarter), try to keep the glider in good focus and as close to full frame as practical so I can evaluate conformance with rules 3.a,b,c & i
        - Demonstrate glider mass is within the prescribed range (rule 3.e) using a scale with resolution to at least 0.1 gm.
        - Demonstrate the wing span is less than prescribed max (rule 3.f) using a rule with resolution to at least 0.1 cm or a go/no go gauge like the one shown on https://www.thingiverse.com/thing:4055500 show the gauge is to correct dimension.
        - Demonstrate the nose of the glider is blunt as prescribed (rule 3.g).
        - Demonstrate the launch handle does not exceed the prescribed dimension (rule 3.h)
        - If you wish to claim the bonus for rule 5.c, demonstrate the fuselage of the glider meets the prescribed minimum using a rule with resolution to

at least 0.1 cm or a go/no go gauge like the one shown on https://www.thingiverse.com/thing:4055500 show the gauge is to correct dimension.

- For a canard glider, clearly demonstrate the fore wing is smaller than the rear main wing (rule 3.j and rule 5.d)

- For rule **4. The Competition:**
  - Flight logs as prescribed (rule 4.c) need to be provided as a separate file in Excel, Word, plain text or PDF format along with the video. It is the team's responsibility to ensure that all documentation submitted is legible.
  - Due to the importance of ceiling height to maximum flight times, times will be handicapped for ceiling height. Provide the height of the ceiling in feet. For ceilings with exposed rafters, use height to the bottom of the rafters. Show the gym and explain briefly how and where you measured the height. Height handicap is per the following table:

Elastic Launched Glider Ceiling Height Scoring Modifications

Ceiling Height	Adjustment Multiplier
< 19'	1
19' - 20'11.99"	0.9
21'-22'11.99"	0.818
23-24'11.99"	0.75
25'-26'11.99"	0.693
27'-28'11.99"	0.643
29'-30'11.99"	0.6
>31'	0.565

  - The flying portion of the competition (rule 4.g-p) should be videoed as if the team were competing in an in-person event. The flight portion of the video should come after all the previous steps and include the following:
    - Clearly show the participant being placed on the ground to start the 1 minute pre-flight.
    - Clearly show all glider launches, follow glider through the flight and end of flight. Try not to lose the glider during its full flight period.
    - Make sure the student can be heard declaring if practice or official.

        - Feel free to show your timers, but the official times will be made by the Event Supervisor based on the video.
- As part of the data verification for your Glider, please complete the Elastic Launched Glider checklist found in these resources (or on the National website, soinc.org) . The complete checklist should be submitted with your video and other documentation. Make sure to record flight times on the checklist as well.

ELASTIC LAUNCHED GLIDER B

Team Checklist – 2021

Rank: _____
Tier: _____
Final Score: _____

Team Number: B School & Team Name: _____

Student Names: _____

GLIDER A	GLIDER B	← CHECK-IN (UP TO 2 GLIDERS)
Construction Parameters:		
T F	T F	3.b. Glider does not use components with pre-glued joints or pre-covered surfaces.
T F	T F	3.c. Glider is constructed using only wood, foam, paper, plastic film, carbon fiber, tape, thread, glue and/or ballast. Any ballast is a malleable non-metallic substance.
T F	T F	3.e. The mass of the glider throughout the flight is > 3.0 g and < 10.0 g.
T F	T F	3.f. Wingspan does not exceed 28.0 cm at any time.
T F	T F	3.g. The blunt nose of the fuselage, when inserted into a lip balm cap, does not touch the end.
T F	T F	3.i. Glider is labeled so the Event Supervisor can easily identify the team to which it belongs.
1. T F	**4. T F**	**GLIDER MEETS ALL CONSTRUCTION PARAMETERS ABOVE**
Bonus:		
2. T F	**5. T F**	5.c. The glider's fuselage can straddle a 32 cm opening (i.e., longer than 32.0 cm)
3. T F	**6. T F**	5.d. The glider is flying in a canard configuration (smaller fore wing or horizontal stabilizer placed in front of the main or larger wing and there is no rear horizontal stabilizer).
	7. T F	5.b. Team's first flight (trim or official) is launched within 1 minute after picking up their glider.

FLIGHT LOG

8. Complete
Incomplete (10% deduction)
Not present (30% deduction)

5.e-f. Is flight log complete, incomplete or not present? (Circle one)
Complete means including 4 or more parameters (including estimated/recorded peak flight height after launch, approximate length of elastic, flight time, and 3 additional) for 10 or more test flights prior to the competition.

1ST FLIGHT	2ND FLIGHT	3RD FLIGHT	4TH FLIGHT	5TH FLIGHT	← OFFICIAL FLIGHTS (IN 8 MIN.)
9. A B	**14. A B**	**19. A B**	**24. A B**	**29. A B**	Which glider from above was used?
					Additional Parameters:
T F	T F	T F	T F	T F	3.h. The launch handle(s) is/are < 1 m long in any orientation, supported completely by a participant, and of a safe configuration. The elastic used in the launch handle is non-metallic, is in contact with the glider throughout the launch, and remains on the launch handle.
T F	T F	T F	T F	T F	4.b. Participants wear eye protection at all times and do not receive outside assistance, materials, or communication once they enter the cordoned off competition area to practice, to trim, for inspection, or to compete.
T F	T F	T F	T F	T F	4.g. Glider is launched from a launch handle by a single participant at floor level.
T F	T F	T F	T F	T F	4.n. Glider is launched while aimed at the ceiling.
T F	T F	T F	T F	T F	4.o. Participants do not steer their glider during the flight.
10. T F	**15. T F**	**20. T F**	**25. T F**	**30. T F**	**FLIGHT MEETS ALL PARAMETERS ABOVE**
11. __:____.__	**16. __:____.__**	**21. __:____.__**	**26. __:____.__**	**31. __:____.__**	**Timer 1**
12. __:____.__	**17. __:____.__**	**22. __:____.__**	**27. __:____.__**	**32. __:____.__**	**Timer 2**
13. __:____.__	**18. __:____.__**	**23. __:____.__**	**28. __:____.__**	**33. __:____.__**	**Timer 3**

← **Flight Times** *(minutes:seconds)*

34. T F General Rule: The team is disqualified. (Notify the team and their coach as soon as possible.)