



2027 Drop Tower Challenge

Fluid Shift

What?

Teams of grade 8-12 students are challenged to design and build small devices that will experience apparent weightlessness, i.e. microgravity, in NASA's 2.2 Second Drop Tower. Each test object will be placed with water (and a little liquid soap) in a plastic vessel. Each device must suck in as much water as possible during the fall, where that will be evaluated by the drop in the vessel's water level.

Video from the drop tests is provided for student analysis and their written report on what was learned. The report and test performance are both key factors in NASA's selection of winners.

Who?

This design challenge is for students in grades 8-12 from U.S. schools, including the fifty states, District of Columbia, Puerto Rico, American Samoa, Guam, the Northern Mariana Islands, the U.S. Virgin Islands, and all DoWEA schools (which are for the children of U.S. military personnel). Except for DoWEA schools, this challenge is not open to participants outside of the United States regardless of their citizenship.

When?

2026

October 26	Proposal deadline
Late November	NASA announces teams or testing
Mid-December	NASA provides proposal feedback

2027

Jan.-February	Teams prepare their devices
Feb. 18	Deadline for arrival of devices at NASA
Feb.- March	Drop tests conducted
April	Analysis and report writing
May 1	Deadline for written report
Mid-May	NASA announces teams
Fall	Annual ASGSR meeting

Where?

Participation is remote, where participants do not travel to NASA for the testing. An exception is for those teams invited to present at the 2027 ASGSR meeting, but its location and dates will not be announced until Dec. 2026.

Why?

Participation in a nationwide NASA design challenge could be good to include in college applications. And odds of selection are high. Thus far, 100% of in-scope proposals have been selected for participation in this annual series of problem-based drop tower challenges.

Questions?

Use the QR code to learn more, but some files and details may not be immediately available. You may also reach out to the challenge staff via Ed-DropTower@lists.nasa.gov.

