

APPENDIX A – FAQs: Frequently Asked Questions

Q: How are microgravity conditions created?

A: During its fall in NASA's 2.2 Second Drop Tower, each object behaves as if there is no gravity, just as if it were in orbit on the International Space Station (ISS). Our sensation of gravity and weight comes from a resistance to its pull, for example because of the floor preventing us from falling. If we are freely falling (e.g., after jumping off a diving board), we feel weightless, and free-fall is the basis for many amusement-park rides. This occurs because all objects fall at the same acceleration unless acted upon by another force. As one result, the astronauts and the ISS fall together (around the Earth) such that the astronauts float within the space station. This happens even though the space station is so close to the Earth that gravity is only about 10% less than that at the Earth's surface.

Q: Can students be on more than one team?

A: No.

Q: Can a team submit more than one proposal?

A: No. Your organization (e.g., school, club, Scout troop, etc.), however, can have multiple teams but it may submit at most 2 proposals to NASA. A school, for example, could select the top 2 proposals to submit to NASA for evaluation.

Q: Can home schools participate?

A: Yes; teams don't need to be affiliated with a school and can be formed from any group of youth in grades 8-12 including siblings, neighbors, and friends as a few examples.

Q: Can teams from countries other than the United States participate?

A: No, unless your team is from a [DoWEA](#) school for the children of U.S. military personnel. All other students from outside of the USA are not eligible, even if they are U.S. citizens.

Q: Can team members be 18 years old?

A: Yes. There is no age requirement for team members; they simply must be in grade 8-12 during the school year. Depending on birthdates, etc., it is understandable that some high school seniors will be 18 and possibly even turn 19 before the end of the school year.

Q: Is there a minimum age for the team's adult advisor?

A: Yes. The minimum age is 21.

Q: Where do we get the entry form?

A: Online, at the [challenge webpage](#).

Q: Can proposals, reports, etc. be submitted in a language other than English?

A: No! They will be rejected, where the challenge staff doesn't have the language skills or resources to appropriately address the challenge in other languages.

Q: Are drawings required for the proposals?

A: Yes; your proposal must include descriptions and drawing(s) of each device, although duplicate drawings are not necessary if the size and shape of your devices are identical. The maximum dimensions must be identified with dimensions on the drawings. They can be drawn by hand, with standard software (e.g., PowerPoint), or using Computer Aided Design (CAD). The drawing(s) must be 'pasted' into the proposal, so that the proposal consists of a single file.

Q: What file formats are acceptable for the proposals and written reports?

A: Your proposal and written report must each be submitted as a pdf file. Teams submitting those documents in another file format risk rejection.

Q: What is the maximum file size for the proposals and written reports?

A: Each proposal's file must be less than 9 MB or it will not be deliverable to the challenge staff.

Q: Does the number of test objects proposed affect the odds of selection?

A: Yes; preference will be given to plans with multiple test objects because their results can be compared in the report.

Q: Can we make our devices using a 3-D printer?

A: Yes.

Q: Can we simply buy our test objects?

A: Yes.

Q: Will we get our devices back?

A: No. Therefore, you might want to make duplicates so that you have copies for your own presentation(s), display, etc.

Q: Will NASA help us with ideas for our proposal?

A: No.

Q: Will NASA provide guidance for our devices if we are selected to participate in the microgravity testing?

A: No, except for reminders, clarifications, etc. about the rules and instructions. Otherwise, the challenge staff won't help teams succeed. The competition isn't over until the winners are invited to present their results at the ASGSR meeting.

Q: Will NASA provide guidance on conducting our own preliminary drop tests?

A: Yes.

Questions? If you can't find the information you need in the guide or at the challenge website, e-mail Ed-DropTower@lists.nasa.gov.