



MICRO-G NExT

Neutral Buoyancy Experiment Design Teams

Micro-g NExT FAQs

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FAQs: General

1. Can international students or institutions participate in Micro-g NExT?

Micro-g NExT is a NASA activity for US citizens and legal permanent residents (LPR) of the US. While international students may participate with a team on campus, they cannot register with the team nor attend the onsite test week for Micro-g NExT at NASA's Johnson Space Center in Houston. Micro-g NExT is also only available to accredited institutions in the US and its territories.

2. What expenses does NASA cover?

There is no direct cost to participate in Micro-g NExT. No entry fees, etc. However, teams selected to participate in this opportunity are not provided monetary awards for their institution. NASA assumes responsibility for costs involved with prototype testing in the Neutral Buoyancy Lab (NBL), but each team is responsible for all other costs, including travel to Houston and the cost of building the prototype. Micro-g NExT will notify participants if any funding or student allowances become available.

3. How much time should I anticipate spending on this project?

Time requirements will vary from team to team. Expect to spend a large portion of your time on design, creation, and outreach. If your team is struggling with time management, please work with your faculty advisor to set a feasible timeline.

4. How many teams will NASA select to test their prototypes in the NBL?

The number of teams selected to test their prototype is not predetermined but is based on the quality of submitted proposals and types of challenges.

5. Can I submit a design for more than one challenge?

Each team may submit a proposal for only one Micro-g NExT challenge.

6. Can more than one proposal be submitted from the same school?

Yes, more than one proposal can be submitted from the same school. However, students may only belong to a single team. Also, if multiple teams are selected, a faculty advisor for each team is needed.

7. Does a prototype need to be submitted with the proposal?

A prototype is not required to be submitted with the proposal. However, a prototype will add to the quality of your proposal.

8. Can teams be comprised of students from multiple schools?

Absolutely! We encourage collaboration and interdisciplinary teams.

9. Can returning teams participate?

Returning teams may participate. However, only two (2) returning team members may travel to Houston for Test Week.

10. How many team members can we have? There is no limit on the number of team members you may have on a team. However, only a limited number of team members, including the faculty advisor, may participate in Test Week at JSC.

11. Our faculty advisor is not a U.S. citizen. Are they still able to work with my team?

Yes, non-U.S. citizens may act as your advisor, but they will not be able to travel to Houston for the Test Week. **Any person participating in Test Week in Houston must be a U.S. citizen or Legal Permanent Resident. An eligible, alternate advisor must accompany the team to Houston.**

12. Are there hardware requirements and/or standards my team should be aware of before testing in the NBL?

Yes. Requirements for testing hardware in the NBL can be accessed in the Micro-g NExT Proposal Guidelines.

FAQs: Technical

You will only be judged on your ability to meet the requirements outlined in the Micro-g NExT challenges.

1. Who would own the intellectual property rights?

NASA hopes to potentially utilize some of your team's ideas in future space missions. Therefore, we ask that teams complete the "Statement of Rights" document. See the Proposal Guidelines for specifics regarding this topic.

2. Some requirements are vague. What should I do in this case?

Some requirements are purposely vague. We want you to conduct research and provide the rationale for why you designed your device the way you did.

3. Can we have detachable parts on the prototypes?

Yes, teams can use multiple pieces of hardware to accomplish the challenge. When all pieces are combined, they should fit within the given dimensions.

4. May we 3D print parts of the tool?

Yes, you may 3D print parts of the tool, but ensure you consider the loads your tool will bear and ensure that the plastics used in the 3D printer can support those loads. No regular PLA is allowed. Please refer to the challenge descriptions document for the infill percentage requirements.

5. Will we have to make a waterproof version of our tool?

Yes, your tool will have to be able to operate in the NBL. We will work with you to ensure you are using approved materials.

6. Does the prototype have to be full-scale, or can it be smaller?

The tool tested in the NBL will be full-scale. However, creating smaller-scale prototypes during the proposal phase is recommended to show the validity of your design.

7. What are the temperatures our materials need to be able to withstand?

The NBL is about 86°F. Therefore, temperature will not be a major factor when developing a prototype.

8. Will tools need to be able to be used with both the left and right hand?

This is not a requirement, but NASA does like tools that can be used by both left- and right-handed astronauts.

9. If we have a part on our design that fits the requirements, is it allowed to stretch outside of the given dimensions when used? Or does everything have to fit within the dimensions you gave us?

The dimensional requirement is a stowage requirement. If your tool doesn't fit into that box when stowed, consider making your device in multiple pieces. Also, not meeting one of the requirements does not disqualify you. You just won't get full credit for meeting that requirement.

10. Can our design deviate slightly from our proposal drawings on the actual day of testing?

Yes, we understand there may be slight modifications to designs after the proposal stage. However, all changes will need to be approved. There are several reviews and steps between proposals and NBL testing. The process for documenting and reviewing final designs and prototypes will be shared with all selected teams.

11. What is considered a sharp edge, and how can they be avoided?

To avoid sharp edges, the minimum radii on exposed edges should be 0.04" or larger.

- This is not a hard requirement, but it is a good idea to include as part of the design. If the hardware passes the sharp edge inspection at the NBL, it will be fine. This inspection involves a person gently running their hands over the hardware and identifying edges that need to be filed down or covered.
- **Please note that exposed threads (on screws, bolts, etc.) are considered sharp edges.** We recommend choosing fastener lengths that are flush with your device/any nuts. If exposed threads are unavoidable, they should be covered with RTV silicone, which comes as a liquid in a tube and cures at room temperature into a soft silicone. Acorn nuts can also cover thread ends.

FAQS: NASA STEM Gateway

1. Does every team member need to submit a proposal?

No. Only one team member will submit the proposal on behalf of the team (preferably the Team Lead). During this process they will add all team members and the faculty advisor to the proposal by entering their names and email addresses with the proposal. We recommend team leads verify the best email address for each team member, which should align with any existing STEM Gateway profiles.

2. Does every team member need to have a STEM Gateway profile? Yes, all team members need to create a STEM Gateway profile unless they already have a profile. If they have a profile, they should review and update their information. The email address used to create the profile is the email address the team lead should use to add them to the team.

3. I have already created a STEM Gateway profile for other engagement openings; do I need to create a new profile?

No, if you are using the same email address attached to your existing profile, you will receive the notification of being added to the team without needing to set up an additional profile. Please review and update your profile in STEM Gateway.

4. How do we add team members?

During the application process the Team Lead will be prompted to add team members. The Team Lead will do this by entering each team member's name and email address. The Team Lead should check with each team member to ensure they are using the correct email address. Team Leads will need to click the "send invites" button to send the invitations to join the team.

5. Do we have to include our faculty advisor as a team member?

Yes, all team members and faculty advisors must be added to your team roster.

6. If we encounter technical issues, who do we contact?

For any issues related to the NASA STEM Gateway website, you can submit a help ticket using this link: <https://stemgateway.nasa.gov/s/create-a-case>.

You may also review the help documents provided in the Micro-g NExT description for this year on STEM Gateway.