

# National Space Sustainability Competition Mentor Guide

## WELCOME & THANK YOU

Thank you for volunteering your time and expertise as a mentor for the National Space Sustainability Competition. By guiding 6th-8th grade students as they imagine sustainable ways to live and work in space or on the Moon, you are helping inspire the next generation of engineers, scientists, designers, and problem-solvers. Your insight, encouragement, and real-world experience are an essential part of this competition.

## YOUR ROLE AS A MENTOR

As a mentor, you are here to:

- **Support & Advise:** Offer guidance that helps teams develop their ideas while keeping them grounded in what is realistic or achievable.
- **Inspire:** Share your professional journey, what you studied, how you entered the space field, and what you enjoy most about your work.
- **Encourage Exploration:** Some projects may fall outside your specialty - that's okay! Model how you research, ask questions, and learn something new.
- **Be a Sounding Board:** Listen to students' ideas, ask clarifying questions, and help them refine their solutions without taking over the project.

You are not expected to have all the answers or to design the project for them - your job is to guide, not to do.

## TIME COMMITMENT

- **Required:** Meet with your team at least once prior to the submission deadline of January 31, 2025. The earlier in the process you meet, the more opportunity students will have to implement your feedback.
- **Encouraged:** Connect more often (virtually or in person, if location allows) to check progress and answer questions. Even short meetings can make a big difference. If students feel like they have a real connection to the space industry, they are more likely to feel confident about reaching out in the future in regard to possibly pursuing a career.

## TIPS FOR EFFECTIVE MENTORING

1. Offer Guidance, Not Solutions
  - a. Ask open-ended questions (“How do you think we could test that idea?”) instead of providing ready-made answers.
  - b. Help students weigh trade-offs between creativity and feasibility.
2. Give Constructive Feedback
  - a. Keep comments positive and age-appropriate: focus on the work, not the student.
  - b. Praise effort, teamwork, and curiosity as much as technical accuracy.
  - c. When something doesn’t work, frame it as a learning opportunity: “What can we try differently?”
3. Empower Problem-Solving
  - a. Encourage students to research unknown topics, then regroup to discuss what they found.
  - b. Share how you approach unfamiliar challenges in your own career.
4. Build Connection
  - a. Take a few minutes to talk about your own educational and professional path - it helps students see the many routes into the space industry.
  - b. Show genuine interest in their ideas, even the “out there” ones - creativity drives innovation!

## PROJECT POSSIBILITIES

Student solutions may include:

- Orbital or lunar habitats or shelters
- Greenhouses and food systems
- Waste management or recycling
- Reusable rockets or orbital recovery devices
- Alternative fuel sources
- Tools, robotics, or equipment
- Power systems, water recovery, or air purification
- Anything that makes living beyond Earth more sustainable

Because the range is so broad, don’t worry if a topic is new to you - help students navigate how to investigate and evaluate new ideas.

## FINAL THOUGHTS

Your mentorship can make a lasting impact. By sharing your experience, encouraging curiosity, and modeling resilience, you are helping students see themselves as future contributors to humanity’s journey beyond Earth.

Thank you for committing your time and expertise to supporting these young innovators - we couldn’t do it without you!