

REALWORLD-INWORLD

NASA Engineering Design Challenge

July 2011

Dear Fellow Educator:

As a National Institute of Aerospace (NIA) Educator-in-Residence, I have the unique opportunity to maintain active ties to classroom teachers **and** to work with scientists, engineers, and researchers at NIA and NASA centers nationwide. In this dual placement, I am currently working with NASA, NIA, USA TODAY Education and LearnIT-TeachIT to present an exciting educational initiative: the **RealWorld-InWorld NASA Engineering Design Challenge**.

RealWorld-InWorld offers both user-friendly and comprehensive resources to teachers/coaches/parents to engage students with NASA technology to explore the cutting edge of science, technology, engineering, and mathematics (STEM) content. The two phases of hands-on and project-based learning encourage students in grades 7-12 to solve authentic, NASA-inspired real-world engineering challenges.

RealWorld (Phase 1): Students work initially with teachers/coaches/parents to explore and design solutions related to the James Webb Space Telescope and Robonaut 2.

InWorld (Phase 2): Participating college students select teams of 2-4 middle- and high-school-aged students who have completed the RealWorld phase to refine their team's designs and create 3D models in an online virtual environment using 21st Century tools and skills.

I have been eagerly sharing the **FREE** RealWorld-InWorld resources with teachers and educators across the country. I am excited to witness the benefits and rewards their students receive when they complete the challenge!

To inspire your students to solve the challenges of space:

- Visit www.nasarealworldinworld.org to register for the **free** standards-based resources and tutorials.
- Incorporate these resources into your educational setting. Phase 1 can be completed in about two weeks.
- Submit your RealWorld team's work by **January 27, 2012**, to be considered to move to the InWorld phase, which requires selection by college team leaders and is limited to U.S. citizens. The process is supervised by NIA.



Sincerely,

Sharon Bowers, Educator-in-Residence, NIA
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RealWorld-InWorld (RWIW) Overview

Grade Levels: 7-12

Content Areas: Science, Technology, Engineering, Mathematics, Computer Science, Technology Education, Information Technology

Applications: 21st Century tools and skills, including technical writing, critical thinking skills, project planning, problem solving, communication skills, research skills, collaboration

Highlights:

- Free educational resources and online tutorials
- Flexible standards-based resources
- Unique online virtual reality experience
- Application of concepts and use of critical thinking in the engineering design process
- Innovative exploration of NASA STEM content
- NASA scientists and engineers visit and "chat" InWorld throughout both phases of the challenge
- Submitted final project solutions featured on the RWIW website; teams receive recognition for their work once they complete the RealWorld challenge and InWorld registration
- Cash awards for competing InWorld teams (\$1,000 per member, including team leader, for each winning team)

"This challenge solidified my choice to pursue a career in mechanical engineering." --Jill Friese, Houston, TX



Sharon Bowers

Sharon is a teacher in Virginia Beach City Public Schools, working as an Educator-in-Residence (EIR) for the National Institute of Aerospace (NIA) in Hampton, Virginia. As an EIR, she develops resources to help teachers use instructional technology to integrate Science, Technology, Engineering, and Mathematics (STEM) into their curriculum.

Sharon is both an experienced educator and gifted curriculum developer for K-12 students and adult audiences. She has taught science for more than 30 years and her work with children earned her recognition as a Secondary Science Presidential Award Winner for Virginia.

Sharon also writes activities and trains teachers for the AIMS Education Foundation, is one of the faculty members for the Mickelson ExxonMobil Teachers Academy, and has been a writer and reviewer for Harcourt Science.

Sharon is adjunct faculty for the University of Virginia. She holds a Bachelor of Arts in Biology/Education and a Master of Education in Special Education from Western Maryland College, now McDaniel College.