

# REALWORLD-INWORLD

NASA Engineering Design Challenge

August 2010

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 new educational initiative: the **RealWorld-InWorld NASA Engineering Design Challenge**.

RealWorld-InWorld offers both user-friendly and comprehensive resources to teachers/coaches to engage their 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 9-12 to solve authentic, NASA-inspired real-world engineering challenges related to the James Webb Space Telescope.

Working initially in a RealWorld (Phase 1) setting with teachers/coaches to develop physical models and solutions related to the Webb telescope, students then collaborate with university students and engineering mentors in the InWorld (Phase 2) Challenge to transform their solutions into 3D virtual models using 21<sup>st</sup> Century tools and skills.

I have been eagerly sharing the **FREE** RealWorld-InWorld resources with teachers and educators. I am excited to witness the benefits and rewards their students will receive when they complete the Challenge! Inspire your students to solve the challenges of space by:

- Visiting [www.nasarealworldinworld.org](http://www.nasarealworldinworld.org) to register for the **free** standards-based resources and tutorials.
- Incorporating these resources into your classroom. Phase 1 can be completed in a little more than two weeks.
- Submitting your RealWorld (Phase 1) design solutions **by January 15** to be eligible for the InWorld Challenge. Participation in the InWorld (Phase 2) component is limited to U.S. citizens.

Sincerely,

Sharon Bowers  
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## RealWorld-InWorld Overview

**Topic:** NASA Engineering Design Challenge

**Grade Levels:** 9-12

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

**Applications:** 21<sup>st</sup> 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  
Minimal teacher commitment, preparation
- Students experience the uniqueness of working in virtual reality
- Students apply their concepts and use critical thinking in a engineering design process
- Students explore innovative NASA resources and STEM content



## **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 high school and adult audiences. She has taught science for more than 25 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 and George Mason University. She holds a Bachelor of Arts in Biology/Education and a Master of Education in Special Education from Western Maryland College, now McDaniel College.