



Human Research Program Education and Outreach Project

<http://www.nasa.gov/exploration/humanresearch/education/index.html>



Human Research Program Education and Outreach Project is committed to using NASA's space research and exploration to educate the nation on science, technology, engineering and mathematics. Project activities and materials target educational communities, the general public, policymakers, and the media using formal and informal venues.



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Objectives:

- ❖ Develop educational content specific to:
 - Elementary education – 3rd to 5th grade sciences, health, fitness, and nutrition associated with space exploration.
 - Secondary education - High school science, technology, engineering and mathematics (STEM)
 - Mathematics coursework using the 5E's (Engage, Explore, Explain, Extend, Evaluate) instructional model, and
 - Advanced Placement (AP) coursework modeled after Free-Response from AP exams.
- ❖ Implement elementary and high school programs at national and international levels.
- ❖ Establish partnerships with internal and external organizations to advance NASA educational and outreach goals.
- ❖ Develop outreach products consistent with the challenges of human space exploration and convey the mission of NASA HRP to the general public.
- ❖ Pursue external funding opportunities to support the expansion of elementary and secondary education program initiatives in underserved and underrepresented areas.

Human Research Program Education & Outreach Primary Education



- A series of Bilingual (Spanish & English) educational materials emphasizing standards-based content, science process skills, and scientific inquiry.
- Twelve educational packages are available with space exploration topics ranging from the human body in space to propulsions systems to engineering design.
- Each package contains: a 30-second newsbreak, an educator and student guide to a hands-on activity, a quiz, glossary, and resource guide.
- Each package is available for the formal classroom and informal educational settings.



Human Research Program Education & Outreach Primary Education



Train Like an Astronaut

•A scientific and physical approach to human health and fitness on Earth and in space. Students train like astronauts by participating in physical activities modeled after real-life physical requirements of humans traveling in space. Students gain an understanding of the science behind nutrition and physical fitness by participating in structured hands-on activities that relate physical Earth-based needs to the requirements of exploring space.



- Ten physical activities and 3 educational activities are available for formal and informal educators.
- Train Like an Astronaut (TLA) has become an official partner of the White House Let's Move! campaign.

Mission X: Train Like an Astronaut



- International challenge using the TLA educational content, using nutrition and physical activities to inspire and motivate students to lead a healthy lifestyle.
- Students conduct the physical activities and educational modules to accrue points for their team.
- Teams document their experiences and submit points on the Mission X communication center website.
- 2012 Challenge: 24 countries, 14 languages, approx. 10,000 students

Human Research Program Education & Outreach Secondary Education



Exploring Space Through Math

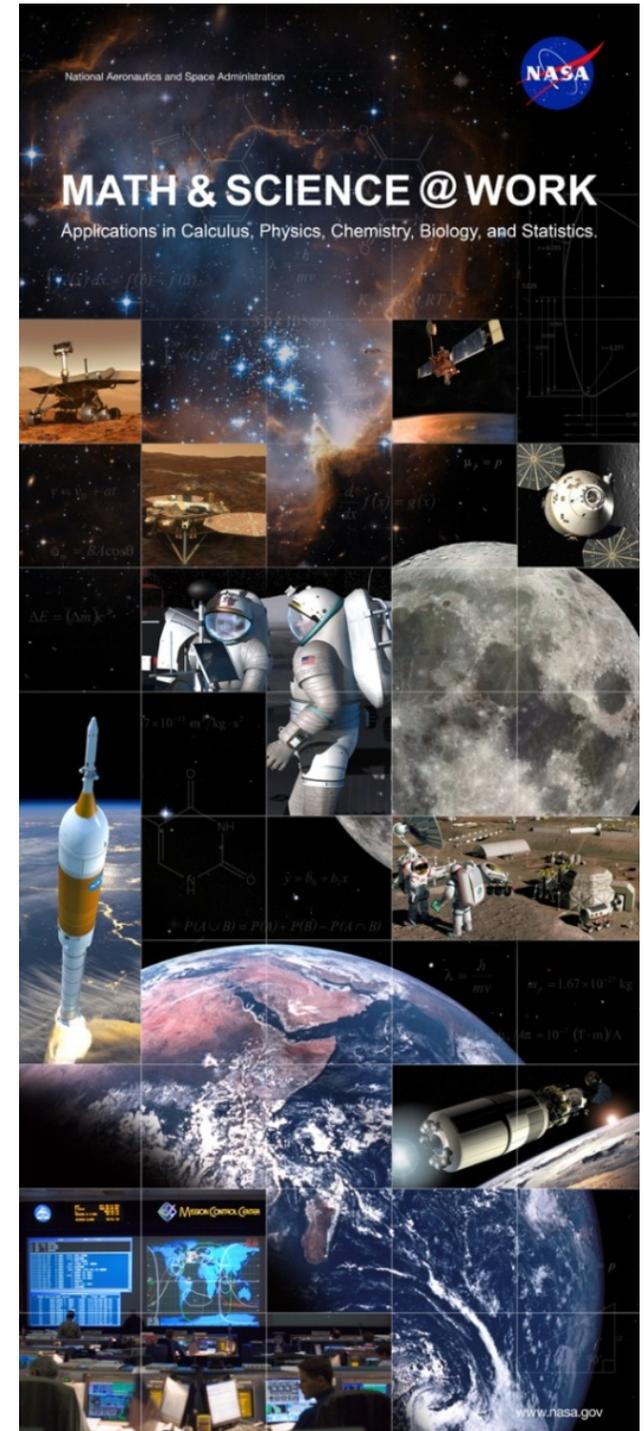
- Highlights the importance of high school math by providing challenging supplemental problems using real-world NASA application and data and incorporating technology.
- Each problem includes a Student Edition and a Teacher Edition which is based on the 5-E's Instructional Model.
- Problems focus on human space exploration themes and promote insight into the limitless career opportunities in science, technology, engineering and mathematics (STEM) fields.

Application in mathematics topics from: Algebra 1, Geometry, Algebra 2, and Pre-Calculus.

Human Research Program Education & Outreach Secondary Education

- Supplemental problems for advanced high school STEM courses, to engage and educate students who require rigorous and challenging materials to keep them focused on their studies.
- Content provides insight into the limitless array of options in science, technology, engineering and mathematics (STEM) field careers by using NASA and Space Exploration as a focal point.
- Each problem includes a student and teacher edition based on College Board AP courses. Problems are modeled after the Free-Response questioning of the AP exam, as well as aligned to lab activities that are used in the courses.

AP Courses covered: Biology, Chemistry, Physics,
Calculus, Statistics, Human Geography and
US History.



Human Research Program Education & Outreach Outreach Emphasis



HRP Displays & Demonstrations

–Simple hands-on interactive exhibits, displays and promotional items that depict various components of NASA’s HRP efforts that improves the General Public awareness of the mission of HRP in addressing the **“Human Challenges of Space Exploration”**.



HRP Website & News

–NASA’s HRP website is updated with new research, activities, and interviews from HRP laboratories and researchers related to Human Spaceflight to keep the public engaged and in tune with HRP.