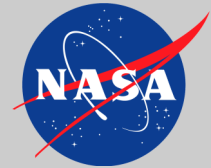


**Free Professional Development
Opportunities for Educators!**

2008-2009 Activity Calendar

100 University Drive
Fairmont, WV 26554
Phone: 304-367-8436
Email: erc@ivv.nasa.gov
Website: <http://erc.ivv.nasa.gov>

NASA IV&V Facility Educator Resource Center



Independent Verification
and Validation Facility

Things to Note:

- **Workshop descriptions** on back.
- **Registration required** at least 7 days in advance, use contact information above.
- **We will come to you!** Contact us to schedule a workshop; recommend 10+ educators.
- Grades listed are suggestions only; all educators welcome.

Todd Ensign

Program Manager
Secondary Education Specialist

Marcie Raol

Elementary Education Specialist



Directions:
I-79 Exit 132
Left onto Rt. 250
Turn onto NASA Blvd
Building is on right

September

- 11 **Space Weather Action Center**, grades 5-8, 6:00-8:00
- 13 **Robotics**, grades 3-12, 10:00-4:00
- 23 **Hubble Space Telescope**, Info Session, 6:00-8:00

October

- 8 **Imagine Mars**, grades 3-8, 6:00-8:00
- 14 **Lunar Nautics**, grades 3-8, 6:00-8:00
- 28 **Engineering Design Challenge: Launch Platform**, grades 5-12, 6:00-8:00

November

- 1 **Energy Series: Science of Energy**, grades 5-12, 10:00-4:00
- 4 **NASA Math and Science**, grades PreK-2, 12:00-3:00
Kindergarten teacher stay until 4:30 and get certified for the **Kindernauts** kit!
- 11 **Graphic Information Systems** grades 5-12, 6:00-8:00
- 18 **CONNECT Math**, grades 5-8, 6:00-8:00

December

- 3 **Astro-Venture**, grades 5-8, 6:00-8:00
- 11 **NASA Portal Gets Interactive**, grades 1-8, 6:00-8:00
- 13 **Energy Series: Hydrogen**, grades 5-12, 10:00-4:00

January

- 19 **Robotics**, grades 3-12, 10:00-4:00
- 24 **Night Sky in the Day Time**, grades K-8, 9:00-12:00
- 28 **Line Up with Math**, grades 5-12, 6:00-8:00

February

- 10 **ISS—What's Up?**, grades K-8, 6:00-8:00
- 16 **Energy Series: Solar Energy**, grades 5-12, 6:00-8:00
- 26 **Weather Projects**, grades 3-8, 6:00-8:00
- 28 **Advanced Rocketry**, grades 5-12, 10:00-4:00

March

- 10 **Sun Earth Connections**, grades 3-8, 6:00-8:00
- 14 **Energy Series: Wind**, Grades 5-12, 6:00-8:00
- 25 **Making the Invisible Detectable**, grades 5-12, 6:00-8:00

April

- 21 **Understanding Flight**, grades 3-8, 6:00-8:00
- 25 **Robotics**, grades 3-12, 10:00-4:00
- 29 **Engineering Design Challenge: Thermal Protection System**, grades 5-12, 6:00-8:00

May

- 14 **Mars THEMIS**, grades 5-12, 6:00-8:00
- 30 **Summer Program Day**, grades K-8, 9:00-5:00
or by session, contact for schedule and details

Advanced Rocketry, grades 5-12

Learn to design and build a model rocket capable of achieving heights up to 300 meters (yours to keep). Also use RockSim software (receive a free trail CD), and learn of rocket competitions for your learners.

Astro-Venture, grades 5-8

Learn to teach the basics of astrobiology with Astro-Venture where NASA scientists help them study, search for, and design a planet habitable to humans.

CONNECT Math, grades 5-8

Learn and explore a video series (now online) and problem based learning activities developed to relate middle school math topics with real world situations.

Energy Series, grades 5-12 (*Educator Kit for each!*)

The Energy Series workshops are based on materials and teacher/student guides for NEED (www.need.org).

- **Science of Energy:** Builds the foundational knowledge of energy types and transfers through activities.
- **Hydrogen:** Learn NEED's H₂ materials and how to implement the fuel cell cars educator kit.
- **Solar:** Enable learners to explain the differences in series and parallel circuits, construct photovoltaic arrays, and understand PV as a potential energy source.
- **Wind:** Use activities from the Kid Wind Project to dispel myths about wind energy and electricity.

Engineering Design Challenge, grades 5-12 (*Educator Kit!*)

Learn the engineering design process used by NASA engineers to complete model design challenges from real life problems.

- **Launch Platform:** The structural elements that hold together an aerospace vehicle must be strong and light to minimize the fuel needed. Build a thrust structure for the launch of a bottle rocket using a wooden lever.
- **Thermal Protection System:** Space vehicles have thermal protection systems to protect against re-entry heat. Build a model to withstand propane torch heat.

Geographic Information Systems (GIS), grades 5-12

GIS increases student understanding of relationships between data and visualizations. Learn to use My World GIS software. Work with a GIS professional to discover the potential for student research.

Hubble Space Telescope, all grades

The final servicing mission to Hubble will be launched in October. Come learn what it is all about and how to bring the excitement to your classroom.

Imagine Mars, grades 3-8

Learn this national educational initiative that leads learners to create a futuristic Mars community. Ties with math, science, social studies, and language arts CSOs.

ISS - What's Up?, grades 3-8

Come learn how astronauts live and work in the International Space Station and discover activities and resources for your educational setting.

Line Up with Math, grades 5-12

Use this web-based Air Traffic Control Simulator and the distance-rate-time problems to enhance learners' decision-making and proportional reasoning skills.

Lunar Nautics, grades 3-8

Explore this program where students assume roles of workers at a fictional aerospace company specializing in mission management, lunar habitat and exploration design, and scientific research.

Making the Invisible Detectable, grades 5-12 (*Educator Kit!*)

Investigations to detect invisible wavelengths of light! Become certified to sign out our educator kit to explore the electromagnetic spectrum in this workshop.

Mars Student Imaging Project, grades 5-12 (*Educator Kit!*)

Get your class involved in authentic Mars research using images of Mars to identify geologic formations. Also use "MarsBound! Mission to the Red Planet" board game to teach Mars missions.

Night Sky in the Day Time, grades K-8 (*Educator Kit!*)

Learn to use the StarLab, a portable planetarium, and classroom activities to teach about astronomy and the moon. Once trained, use the StarLab in your setting!

NASA Math and Science for Grades PreK-2

Great activities for your learners to get them excited about space. Kindergarten teachers should stay until 4:30 to get certification on **Kindernauts**, a station based kit designed which covers over 40 CSOs and is full of great stuff!

NASA Portal Gets Interactive, grades 1-8

Make learning about SpinOffs, the International Space Station, and more, interesting and relevant using the portal's interactive features and these great activities.

Robotics, grades 3-12 (*Educator Kit!*)

Program LEGO NXT robots using MINDSTORMS NXT G software, Engineering curriculum, and previous FLL challenges to help teach math, science, and soft skills.

Space Weather Action Centers, grades 5-8

Make your students Space Weather reporters using green-screen technology, video editing software, and NASA data websites on the Sun, Magnetosphere, Auroras, and more.

Summer Program Day, grades K-8 (*Educator Kits!*)

Need some science hands on stations for your summer camp or to gear up for next school year? Learn about our kits which will be available for loan after training. Contact the ERC for details and schedule.

Sun Earth Connections, grades 3-8

Make connections between the Sun and Earth, including Space Weather and Auroras. Great freebies!

Understanding Flight, grades 3-8

Learn hands on activities to teach the principles of flight with balloons, kites, and gliders.

Weather Projects, grades 3-8

Use these projects to help learners interact with weather concepts and bring the outdoors in.

Educators will receive free NASA materials at all workshops. Additionally, participating in workshop noting an educator kit will enable educators to borrow materials to implement content covered.