



Teaching STEM Through Aerospace

A Teacher Workshop Sponsored by: The Federal Aviation Administration & McAuliffe-Shepard Discovery Center

To register, contact the McAuliffe-Shepard Discovery Center.

603-271-7827 when recording starts dial 0 (zero).

50% non-refundable deposit required to register.

If you have any questions contact:

David McDonald, M.Ed.
Director of Education
603-271-7827 x114

Join us for a fun-filled teacher workshop and learn how to educate your middle and high school students about STEM (Science, Technology, Engineering, and Mathematics) through aerospace based activities.

Date: June 30, 2009

Time: 9:00 a.m. - 3:30 p.m.

Location: McAuliffe-Shepard Discovery Center, Concord, NH

Registration Fee: \$75 per person (includes up to an \$8.00 credit towards lunch purchase at the McAuliffe-Shepard Discovery Center's Countdown Café)

- Registrations are taken on a first-come, first-served basis. The workshop is limited to 80 participants.

June 30th Concord Teacher Workshop

AGENDA

Time	Classes
9:00-11:00	AeroLab 2 hr Class Flight Sim in the Classroom 2 hr class
11:00-12:30	Think Like Scientists and Engineers: Using Innovative Tools to Engage Millennial Learners (Part 1) 4 hr class NASA High School Challenges (Part 1) 4 hr class
12:30-:100	Lunch
1:00-3:30	Think Like Scientists and Engineers: Using Innovative Tools to Engage Millennial Learners (Part 2) 4 hr class NASA High School Challenges (Part 1) 4 hr class

AeroLab

How things fly is always a topic of high student interest. AeroLab lessons feature simple foam and balsa airplanes as tools to teach middle and high school math and applied physical science. The lessons focus on Newton's laws of Force and Motion; students learn to calculate the average speed of a moving object and illustrate the motion of objects on graphs of distance over time. They learn to describe qualitative relationships among force, mass and changes in motion as well as the forces acting on an object moving in a circular path.

All labs are geared to state and national middle-level math physical science standards and are easily modified to match local curricular needs. The lessons are designed for directed or guided inquiry, using simple flying machines to illustrate basic activities in math and physical science, providing opportunities for students to collect data and graph results, as well as participate in teams to analyze data and manipulate variables. Participants in this workshop will build and fly model aircraft suitable for use in middle and high school classrooms - flying models with lessons teachers can use on Monday!

About the presenter: Gordon Schimmel, Ed.D., has recently retired after twenty-one years as superintendent of the Mansfield (Connecticut) Public Schools. He is co-author of *Inventing Flight*, a curriculum written to celebrate the 2003 Centennial of the Wright Brothers' Flight at Kitty Hawk and AeroLab, a series of standards-based math and physical science activities funded by the Academy of Model Aeronautics (AMA) and the Alcoa Foundation. He has served as Chair of the AMA Education Committee for thirteen years, conducting numerous professional development workshops for teachers in the U.S. and abroad.

NASA High School Challenges

These four challenges were written for the Engineering by Design curriculum and are available through the International Technology Education Association. This session will provide training for high school teachers on the Human Exploration Project's High School Classroom Challenges. The session will be hands-on and minds-on, preparing teachers to return to their schools to implement the challenges. Titles include, "Moving Cargo," "Transportation and Space (Reuse and Recycle)," "STS 118 Lunar Plant Growth Chamber," and "Engineering Design for Human Exploration."

Flight Sim in the Classroom

The workshop will use "Microsoft" Flight Simulator to demonstrate various STEM skills. An overview of the program capabilities will be given as well as unique approaches to science and math using flight simulation themes. Participants will explore possibilities using flight simulations as a STEM tool. Participants will also discuss co-curricular and hands on activities. Come learn how to teach STEM using flight simulators!

Think Like Scientists and Engineers: Using Innovative Tools to Engage Millennial Learners

Use innovative resources and technology tools to engage your 21st century learners. Help students see applications for what they learn while gaining a deeper understanding of science, technology, engineering, and mathematics (STEM). Teach your students to create their own vodcasts and musical digital collages to showcase what they know. Explore NASA eClips™, Discovery NOW, and other free resources from NASA and the National Institute of Aerospace to enhance existing curriculum while encouraging students to think and act like scientists and engineers. Participants will have an opportunity to participate in hands-on activities and explore online resources. A hotlist of resources will be provided.