

Aviation Education Report

Fall 2015

Resources

FAA ACE Academies – ACE Academies are summer educational programs for middle and high school students that can last from one day to one week and are co-sponsored by FAA along with many other organizations.

FAA cosponsored ACE academies are eligible to request Orientation Flights in military aircraft as available. See DoD 4515.13-R Subsection C2.2 Eligible Passengers Subsection C2.2.15 Youth Program Participants. Authorization must be approved and DD Form 2535 must be submitted in advance of the event. Visit www.faa.gov/education/student_resources/ace_camps to learn more about ACE Academies.

FAA Walk in My Boots Program – contact James Brough (james.brough@faa.gov) for information and availability in your area. The intent of this program is to give high school students the opportunity to learn first-hand about careers in aviation maintenance, avionics, and engineering by allowing them to work with the professionals in these career fields.

Real World Design Challenge (RWDC) – aeronautical engineering competition, www.realworlddesignchallenge.org. Open to high school students. Any coach who fields a team of 3 – 7 students received \$1M worth of software FREE. See if your state has a State Coordinator or look at the Getting Started Page to register a team or teams.

Build a Plane (www.buildaplane.org) – A national nonprofit dedicated to putting wrecked aircraft into the hands of youth to rebuild, refurbish or restore. For an example of a very successful project. Check out the Talkeetna BAP project. For some online info visit www.facebook.com/pages/Talkeetna-Build-A-Plane/192951127440144 and check out their photos.

International Aviation Art Contest – held annually. Sponsored by NASAO (National Association of State Airport Operators).

www.nasao.org/education/nasao-center-for-aviation-research-and-education/international-aviation-art-contest/

Since 1989 the Fédération Aéronautique Internationale (FAI) has sponsored the International Aviation Art Contest to challenge young people to illustrate the importance of aviation through art. Demonstrating the impact of aeronautics through an interactive, fun medium such as art motivates youth of all ages to become more familiar with aeronautics, engineering and science. The U.S. portion of the contest is sanctioned by the National Aeronautic Association (NAA), managed by the NASAO Center for Aviation Research and Education and sponsored by Embry-Riddle Aeronautic University - Prescott, Ken Cook Co., the Federal Aviation Administration, and the National Coalition for Aviation and Space Education with additional support from NASAO members. Children between the ages of 6 and 17 may participate. Entries will be judged in three classes, according to age and at least in part for its creative use of the theme in relation to the aviation world. Each FAI member country sponsors the contest in their country, and submits national winners to the International Jury each year.

NASA Virtual Skies – online curriculum modules (virtualskies.arc.nasa.gov)

Aviation Education Report Fall 2015

Smart Skies – online **Air Traffic Control Simulator** - Teacher's side of the website is virtualskies.arc.nasa.gov/index.html. It has downloadable worksheets and explanations for classroom use. Student's direct connection to simulator is at www.atcsim.nasa.gov. Requires Java and works best in a browser other than Internet Explorer, e.g. Mozilla. Though it was designed for grades 5-9 the simulator grabs attention for almost everyone. This simulation is also available for iPod, iPhone, most "i" platforms. Can be obtained FREE from iTunes as "Sector 33". Android version was released and will be improved later this year.

Path to Aviation is an AOPA program and resources for High School students. You can download the materials for free from AOPA or order hard copy books – I am not sure the books are still available (www.aopa.org/path).

Youth Aviation Adventure (www.youthaviationadventure.org) has an excellent program that can be used with large groups (100-150) or smaller groups with a single pilot flying to a rural airport and presenting a smaller. This program runs between 4-5 hours and has well prepared materials. It is best done at an airport. YAA is a 100% volunteer run organization that aims to develop a modular, inexpensive, repeatable system for sharing the love of aviation with children that can be transplanted and duplicated anywhere.

Fly to Learn - S.T.E.M. Education Through Aviation (www.flytolearn.com).

Students of all ages learn science, technology, engineering and math (S.T.E.M) through designing, building, and flying their own virtual airplanes. The software, including curricula and training, costs less than a few dollars per student annually. Developer is Tom Dubick a middle school teacher. He has added a virtual air race challenge and a page on how to find grant funding. Phone 1-347-746-7836. To see a short video about the program, visit: www.flytolearn.com/stem-curriculum. Fly to Learn has partnered with Build a Plane and General Aviation Manufacturers Association (GAMA) to sponsor an annual virtual air race. Two winning teams have received an all expenses trip to the Glassair factory in Washington state to participate building a GA aircraft in a 10 day program.

Civil Air Patrol (CAP) – has a mission focused on aerospace education. They have developed some top notch aerospace education curricula and materials. Educators can join CAP as AEMs (Aerospace Education Members) and have access to all of their materials for FREE. Visit www.capmembers.com/joinaem. There is a link to the complete listing of CAP's AE curriculum materials on this page. Information on the **Cadets at School program** can be found at www.capmembers.com/schools. There is a complete brochure you can use to share this program with educators. This type squadron is the same as any other cadet squadron, but just meets either during or after school at the school (after school works best). So, if you have any questions about that program, you can contact Neil Probst at CAP NHQ – Maxwell AFB.

CAP also has a program for elementary grades called "ACE", **Aerospace Connections in Education**, with fully developed curricula modules. To find out all about the CAP K-6 Aerospace Connections in Education (ACE) program go to www.capmembers.com/ace.

The Air Force Association (www.afa.org/afa/informationfor/teachers/k12grants).

Check online for the contact person for your state. Through CAP AE, the AFA is also sponsoring STEM kits for Aerospace Education members of CAP.

Aviation Education Report Fall 2015

Pitsco Education Company (www.pitsco.com/store/default.aspx?lp=21&bhcp=1). Also see their page: "Investing in the Grant Search" (www.pitsco.com/about/item.aspx?art=314).

Look for your local RC Aircraft Club, members are willing to come and work with kids demonstrating RC Aircraft and teaching them to fly using a "buddy box". You can search for local groups at www.modelaircraft.org.

NC3 – National Coalition of Certification Centers (NC3) (www.nc3.net) was established to address the need for strong industry partnerships with educational institutions in order to develop, implement and sustain industry-recognized portable certifications that have strong validation and assessment standards. Currently they have aviation certifications for Torque wrenching and metering with more certifications under development. They have other certification in Energy and Transportation.

NextGen - The FAA's initiative to update the National Air Space (NAS) system. You should be able to see this video explaining what NextGen is at www.faa.gov/tv/?categoryId=44. It also offers a view into what Air Traffic Control is all about. FAA has a whole section of videos called FAA TV which you may or may not be able to access. They appear to be on the public side of the FAA website, but I am not sure. Let me know if you cannot get to this page: www.faa.gov/tv.

Training and Testing – if you have not visited this part of the FAA website you should go there at www.faa.gov/training_testing. There is access to Handbooks and manuals for FREE download – such as the Pilots Handbook of Aeronautical Knowledge and easy access to the FAA Safety Team's online course sand Wings Pilot Proficiency program.

SOME EXTRA GOODIES:

Here are some fun things for the holidays - www.faa.gov/tv/?tag=santa. You can also track Santa's flight after December 1 at www.noradsanta.org.

You can visit NASA's **NEON (NASA Educators Online Network)** website here: www.neon.intronetworks.com. There are a number of challenging contests on this site. NEON is your source for STEM connections, Collaboration, Learning Resources and Support.

Wolf Aviation Fund, www.wolf-aviation.org. The Wolf Aviation Fund program usually begins on September 15, and ends on December 15. Please read through these pages carefully for information on requirements and procedures. Grants will usually be awarded by the end of April in the year after our grant program ends. The deadline for normal processing is midnight on December 15. **For scholarships and flight training grant information please see www.wolf-aviation.org/scholar.htm.**

Flying Over America - Here's the US like you've never seen it before: www.youtube.com/watch_popup?v=KcuDdPo0WZk. Good for a geography lesson.

If you haven't seen "**Amazing Kites**" on You Tube - check it out. www.youtube.com/watch?v=E69flRyIQRo. This guy really understands aerodynamics.

Aviation Education Report Fall 2015

Alaska Weather Cameras – www.avcams.faa.gov.

Jessica Cox Motivational speaker born without arms, Jessica is a licensed Light Sport pilot flying a Ercoupe. She does EVERYTHING with her feet. Visit www.rightfooted.com or watch www.youtube.com/user/rightfootedwoman.

Other Partners

National Girls Collaborative Project (www.ngcproject.org) - The **vision** of the NGCP is to bring together organizations throughout the United States that are committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).

The **goals** of NGCP are to:

1. **Maximize access to shared resources** within projects, and with public and private sector organizations and institutions interested in expanding girls' participation in STEM.
2. **Strengthen capacity** of existing and evolving projects by sharing exemplary practice research and program models, outcomes, and products.
3. **Use the leverage of a network** and the collaboration of individual girl-serving STEM programs to **create the tipping point for gender equity in STEM**.

The **project focus for 2011-2016** is:

1. Strengthen the capacity of girl-serving STEM programs to **effectively reach and serve underrepresented girls** in STEM.
2. Increase the effectiveness of collaboratives by providing professional development focused on **sustainability, organizational effectiveness, and shared leadership**.
3. Maximize **K-12 school counselors'** access to and use of relevant, high-quality resources that increase awareness of barriers to girls' interest and engagement in STEM.

Girls Scouts of America (<http://www.girlscouts.org/>) - Some Girl Scout regions hold a Women of Science & Technology Day. This is a great opportunity to give hands on activities around the Four Forces of Flight. Contact Angie Slingluff if you want some ideas. Girl Scouts also have an Aviation Interest Badge – no longer called “merit” badges.

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